Apelon Distributed Terminology System (DTS)

DTS Browser Users Guide

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Introduction

The *DTS Browser Guide* describes the use and operation of the DTS Browser. This guide has been prepared to help both the new and experienced Apelon DTS user to obtain the most benefit from the Apelon DTS Browser.

DTS Browser Overview

The Apelon DTS Browser tool represents the client side of the Apelon DTS client/server Internet interface. It lets you access your Apelon knowledgebase either through your company's intranet or the public Internet (Web).

Using your desired Internet Browser (**Explorer 6x**, **Explorer 7**, or **Firefox 1.5**, **Firefox 2.0**) as a front end for the DTS Browser, you can access your knowledgebase from any location. The DTS Browser allows you to view an **Ontylog** tree of concepts within a selected namespace, or an Association (**Thesaurus**) tree for a selected namespace.

The Ontylog tree displays a namespace concept hierarchy reflecting the superconcepts and subconcepts (i.e., parent concepts and child concepts) for each concept in the namespace. The Association tree displays namespace concepts based on associations between concepts (e.g., a concept that is part of another concept, a concept that contains another concept, etc). View options allow you to expand and collapse each displayed tree to display only the concepts you want. Views that provide detailed attributes for selected concepts also are available.

The DTS Browser also allows you to search namespaces, subsets, and knowledgebase silos based on the search string parameters you specify. You can run wildcard searches that retrieve results **similar** to your search string parameter, or run **Exact Match** searches that retrieve only those concepts that match your search parameters exactly.

System Requirements

The DTS Browser operates in a client/server environment. Your system must have your preferred browser (**Explorer 6x**, **Explorer 7**, or **Firefox 1.5**, **Firefox 2.0**) installed to use the DTS Browser. Refer to the *DTS Server Installation Guide* for information on server requirements.

If **cookies** are not allowed or are not enabled in the Internet browser you are using, the DTS Browser will obtain required display configuration detail settings for each new Browser session from the **dtsbrowserconfig.xml** file (**DTS3.4\tomcat\bin**). The DTS Browser Administrator can use the default settings, or modify the configuration.

Refer to *Appendix A - DTS Browser Configuration Parameters* for more on the **dtsbrowserconfig.xml** file configuration settings.

> **Note**: In order for the DTS Browser to work, the Tomcat server must be running. Also, in order to use the Socket Server Connection, the Apelon DTS Server must be running along with the Tomcat server.

Start the Apelon DTS Browser

To run the Apelon DTS Browser, you first must start the Tomcat Server on the machine where the DTS Browser component is installed. You can start the Tomcat Server from the *Windows* **Start** menu, or you can install and run Tomcat as a **service**. Refer to the *Tomcat Server* discussions in the *DTS Server Operations Guide* for procedures on configuring and running the Tomcat Server.

Next you must log into the DTS Browser. If the DTS Browser component is installed on the local machine, log into the Apelon DTS Browser by selecting **DTS Browser** on the *Windows* **Start** menu (**Start>Programs>Apelon>DTS>Apelon DTS Browser**). This starts your browser and automatically connects to the DTS Browser URL defined for your local system.

If the DTS Browser component is installed on a different machine, you can start the DTS Browser by connecting to the machine where the Tomcat Server is running. Enter the following URL in your Web browser:

http://<dtsbrowserhost>:8081/dtsbrowser/index.jsp

To run the Apelon DTS Browser on a Linux installation, execute *StartApelonServer.sh* in **bin/server** to start the Apelon DTS Server. Execute **runtomcat.sh** (with the **start** argument) in **bin/browser** to start the Tomcat Server, then enter the following URL in your Web browser:

http://<dtsbrowserhost>:8081/dtsbrowser/index.jsp

Use the DTS Browser Over the Internet

If you need to access the DTS Browser across the Internet, you must change the *Windows* shortcut used to access the Browser. Follow this procedure to change the shortcut.

1. Go to **Start\Programs\Apelon\DTS\Apelon DTS Browser**.

2. Right-click on **Apelon DTS Browser**. An option menu displays.

3. Select **Properties** from the menu. Under URL the path **http://localhost:8081/ dtsbrowser** displays.

4. Change "*localhost:*" to the IP address or host name of the machine on which Tomcat is running. Change the port **8081** only if Tomcat has been configured to run on a different port.

5. Click **OK** when finished.

Each time you access the DTS Browser you will be routed to the Tomcat Server automatically over the Internet.

Establish a Connection

1. After communication with Tomcat is established, the *DTS Browser Welcome* window displays.

2. Click on the *Connection* dropdown to display the available options.

When you install DTS (using the "InstallShield" wizard) you must specify the type of database (**Oracle** or *Microsoft* **SQL Server** database) on which you will maintain your DTS data, as well as the driver through which the DTS Server and DTS Editor will access that data. The appropriate DTS configuration files (e.g., **drivers.xml**) are updated to reflect your selection.

If you maintain the knowledgebase in a *Microsoft* SQL Server database, you have the option of using either of these drivers:

- *Microsoft* JDBC driver (the required **SQL Server** driver is installed automatically.

- I-Net Sprinta JDBC driver (Apelon recommends that you obtain and install the **iSprinta Enterprise**™ driver, which provides the multiple connections required to use DTS).

If you designated *Microsoft* SQL as the database during DTS installation, the dropdown list looks like the following:
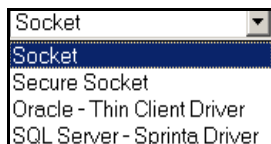
3. The login information that you enter for your first login can be saved by Internet Explorer, simplifying your login procedure in the future. Use the Internet Explorer Autocomplete feature to automatically enter your login information. **Note**: This process significantly reduces the security level afforded by a login. If the computer being used to access the DTS Browser is shared with other users, you should not use the Autocomplete feature.

   To use the Autocomplete feature, open Internet Explorer and go to: **Tools/Internet Options/Content/Autocomplete**. The *AutoComplete Settings* window displays. In the **Use Autocomplete for** section select the appropriate checkboxes to enable the Autocomplete feature for your login.

Socket Server Connection

1. Start the Apelon DTS Server from the *Windows* Start menu (**Start>Programs> Apelon>DTS>Start Apelon DTS Server**).

   > For a Linux installation, execute *StartApelonServer.sh* in **bin/server** to start the Apelon DTS Server.

2. Ensure that the Tomcat Server is running (**Start>Programs>Apelon>DTS> Start Tomcat**).

   > For a Linux installation, execute *runtomcat.sh* in **bin/browser** to start the Tomcat Server.

3. If DTS Browser is installed on the local machine, select **DTS Browser** from the *Windows* **Start** menu (**Start>Programs>Apelon>DTS>Apelon DTS Browser**).

   If DTS Browser is installed on a different machine, start DTS Browser by connecting to the machine where the Tomcat Server is running. Enter the following URL in your Web browser:

   http://<dtsbrowserhost>:8081/dtsbrowser/index.jsp

   The *DTS Browser Welcome* window displays.
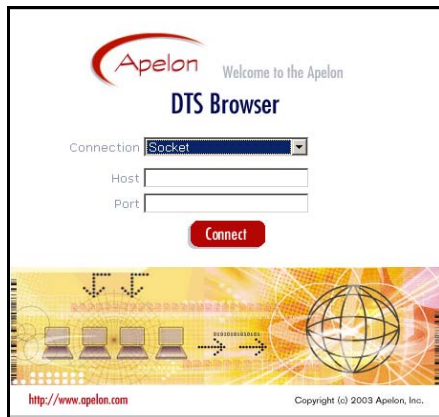
4. Click on the *Connection* dropdown to display the available options. If you designated *Microsoft* SQL Server as the database during DTS installation, the dropdown list looks like the following:
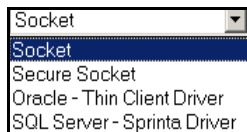
5. Select **Socket** from the *Connection* dropdown field.

6. Specify your *Host* name (for the machine where your DTS Server resides) and *Port* number of the DTS Server.

7. Click **Connect** on the *DTS Browser Welcome* window to establish the **Socket** server connection with your DTS Server.

Secure Socket Server Connection

1. Start the Apelon DTS Server from the *Windows* Start menu (**Start>Programs> Apelon>DTS>Start Apelon DTS Server**).

   For a Linux installation, execute *StartApelonServer.sh* in **bin/server** to start the Apelon DTS Server.

2. Ensure that the Tomcat Server is running (**Start>Programs>Apelon>DTS> Start Tomcat**).

   For a Linux installation, execute *runtomcat.sh* in **bin/browser** to start the Tomcat Server.

3. If DTS Browser is installed on the local machine, select **DTS Browser** on the *Windows* **Start** menu (**Start>Programs>Apelon>DTS>Apelon DTS Browser**).
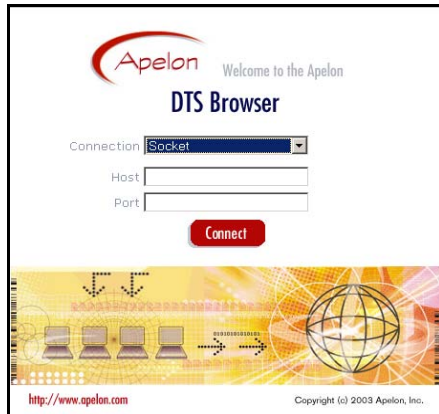

If DTS Browser is installed on a different machine, start DTS Browser by connecting to the machine where the Tomcat Server is running. Enter the following URL in your Web browser:

http://<dtsbrowserhost>:8081/dtsbrowser/index.jsp

The *DTS Browser Welcome* window displays.

Click on the *Connection* dropdown to display the available options. If you designated *Microsoft* SQL Server as the database during DTS installation, the dropdown list looks like the following:
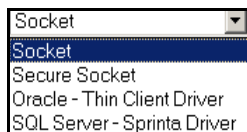
4. Select **Secure Socket** from the *Connection* dropdown field. To use a secure socket connection, the DTS Server must be configured to use Secure Server Mode, and a user must have been created. The Server Administrator should refer to the *DTS Server Operations Guide* for details.

The *DTS Browser Welcome* window displays the *Username* and *Password* fields.

5. Enter your *Username*, *Password*, *Host* name (for the machine where your DTS Server is running) and *Port* number to access the DTS Server.

6. Click **Connect** to establish the secure socket server connection.

JDBC Connection – Oracle Thin Client Driver

1. Ensure that the Tomcat Server is running (**Start>Programs>Apelon>DTS> Start Tomcat**).

   > For a Linux installation, execute *runtomcat.sh* in **bin/browser** to start the Tomcat Server.

2. If the DTS Browser will access a database using the Oracle Thin Client, the **Oracle-Thin Client Driver** connection option is included in the *Connection* dropdown field list on the *DTS Browser Welcome* window.
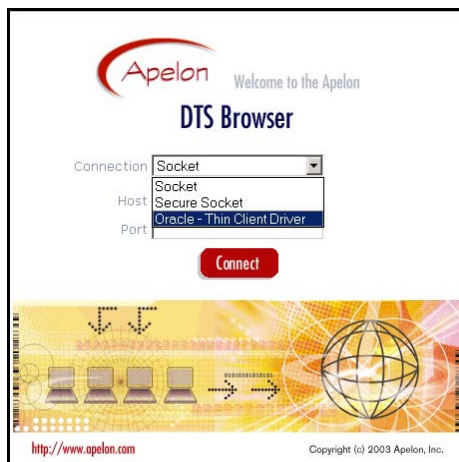
Click on **Oracle Thin Client Driver**. The *DTS Browser Welcome* window displays as follows.

3. Specify the *Username*, *Password*, Server *Host*, Server *Port*, and database *Instance*.

4. Click **Connect** to establish the connection.

JDBC Connection - SQL Server With iSprinta Enterprise or *Microsoft* Driver

1. If the DTS Browser will access a database using a **Microsoft SQL** server connection (i.e., during DTS installation you selected an SQL Server connection using the **iSprinta Enterprise**™ driver) the **SQL Server - Sprinta Driver** connection option is included in the *Connection* dropdown field list on the *DTS Browser Welcome* window.

Click on **SQL Server - Sprinta Driver**. The *DTS Browser Welcome* window displays as follows.

If the Browser will access a database using a **Microsoft SQL** server connection (i.e., during installation you selected a SQL Server connection using the **Microsoft** driver) the **SQL Server - Microsoft Driver** connection option is included in the *Connection* dropdown field list. Click on **SQL Server - Sprinta Driver** to select it.

2. Specify the database name (*Db Name*) *Username*, *Password*, SQL Server *Host*, SQL Server *Port*, and database *Instance*. Leave the *Instance* blank if you are using a default instance rather than a named instance.

3. Click **Connect** to establish the connection using the selected driver.

Content License Page

For some installations, third-party proprietary information may be included in the namespace you are using the DTS Browser to access. If this is the case, a *License* page displays when you attempt to connect to the server. The *License* page provides information on the conditions of use for this third-party information. Note the sample *License* page that is illustrated.
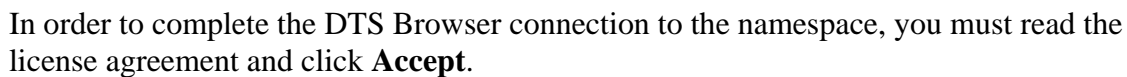
In order to complete the DTS Browser connection to the namespace, you must read the license agreement and click **Accept**.

If there are no licenses required in the knowledgebase you are accessing, the following window displays regarding compliance with copyright restrictions.

Click **Accept** to acknowledge the copyright restrictions.

When the connection is complete, the *DTS Browser* window displays.

Bypass the *DTS Browser Welcome* Window and User Logon

If you want to make terminologies available to users to view using the DTS Browser, they can use a URL that bypasses the *DTS Browser Welcome* (logon) page and provides direct access to the Browser. You must set up the database and/or socket server, and fill in the parameters illustrated in the URL templates.shown below.

jdbc

http://localhost:8081/dtstreebrowser/connect.do?conn_type=driver&user=dts34_107&pass=dts34_107&host=digit&port=1521&instance=orcl&driver_number=1&driver_type=jdbc

secure

http://localhost:8081/dtstreebrowser/connect.do?conn_type=secure_socket&user=doconnor&pass=21222122&host=localhost&port=6666
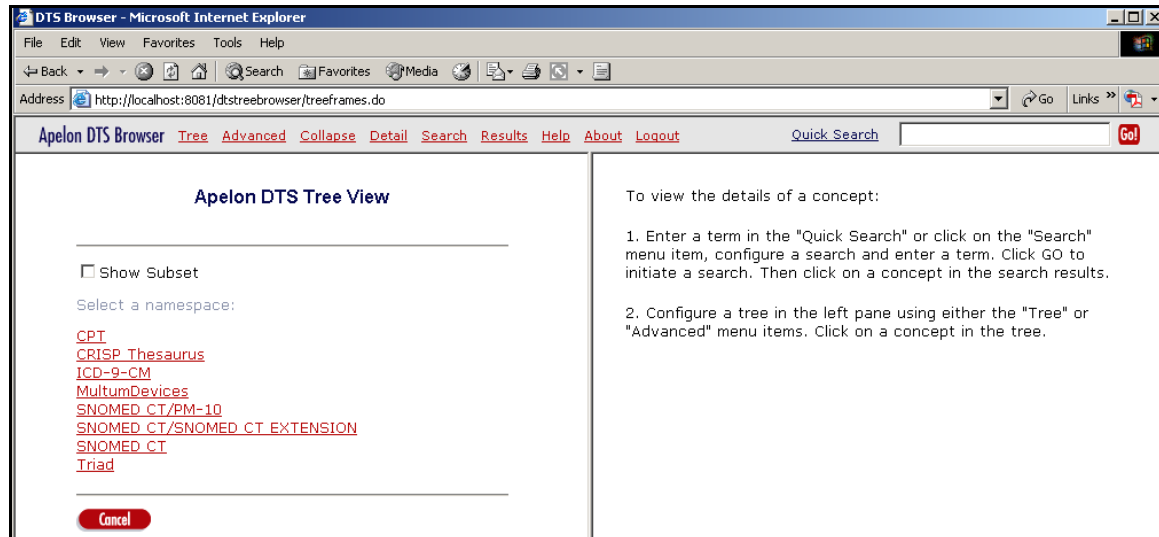
socket

http://localhost:8081/dtstreebrowser/connect.do?conn_type=socket&host=localhost&port=6666

> Note that the user will still have to read the license terms on the *License* page, then click **Accept** to accept the displayed terms.

DTS Browser Main Window

Overview

After you log in and establish your connection, the *DTS Browser* window opens.

On the *DTS Browser* window you can select a namespace in your knowledgebase (Ontylog or Thesaurus) and construct a tree consisting of concepts in that namespace (in DTS, a namespace refers to a specific source **terminology** of concepts and/or terms). You then can view the resulting concept tree, and expand segments of it to view lower-level concepts.

Some namespaces (called **Thesaurus** namespaces) do not have concepts organized in superconcept/subconcept relationships, but have **associations**. Associations define specific relationships between concepts within one namespace, or across multiple namespaces (rather than containing concepts themselves that can be built into a hierarchy tree). An **Advanced** option allows you to modify the default association type (**Parent of**) and customize an Association tree that displays concepts based on the type of relationship you specify.

For a selected concept in a tree you can display detail information, such as relationships to other concepts, concept properties, etc. A customization panel allows you to select which concept details you want to view.

Through use of the **Subset Editor** functionality available in the DTS Editor, you can create one or more **subsets** for a namespace. Each subset is comprised of concepts selected from a namespace based on the filter criteria that you define.
If subsets exist for the namespace you choose for view, the *DTS Browser* can highlight within the displayed namespace hierarchy those concepts that exist within one of its subsets. For an Ontylog namespace, you also can view a subset's concept hierarchy itself.

Using the *DTS Browser* you can initiate knowledgebase **searches** for concepts that match the criteria you specify. Only results that match your search parameters will be retrieved. You then can display details from one or more of the retrieved concepts.

When the *DTS Browser* window opens, the *Apelon DTS Tree View* panel displays in the left pane. Procedures for configuring tree views are discussed in the next section. Procedures for configuring the *Detail View* and concept searches are included later in the guide.

DTS Browser Window Menu Bar Options

A series of options displays in the **Menu** bar of the *DTS Browser* window.

- **Tree** - Displays the *Apelon DTS Tree View* panel, which lists all namespaces; here you can select a namespace (Ontylog or Thesaurus) and construct a tree view.

- **Advanced** - Displays the *Advanced Tree View* panel, where you can change the default association type (**Parent of**) and customize a tree based on a chain of associations.

- **Collapse** - Collapses all lower-level nodes in a displayed tree, listing only top-level concepts.

- **Detail** - Displays the *Customize Detail View* panel, where you can customize which detail attributes to include in the concept detail view.

- **Search -** Displays the *Search Apelon DTS* panel, where you can configure search criteria that include only a **single** concept attribute category (i.e., Name **or** Properties **or** Roles).

- **Results** - Displays search results based on the most recent search criteria.

- **Help** - Displays DTS Browser online help in HTML format.

- **About** - Displays the DTS Browser version and copyright date.

- **Logout** - Ends the current session and redisplays the *DTS Browser Welcome* window.

The options in the **Menu** bar that allow you to navigate between the DTS Browser display panels are discussed throughout the guide.

Note: If during the current session there has been no activity in the DTS Browser for one hour, your session will be "timed out." You will be required to reconnect (i.e., log in again) on the *DTS Browser Welcome* window.
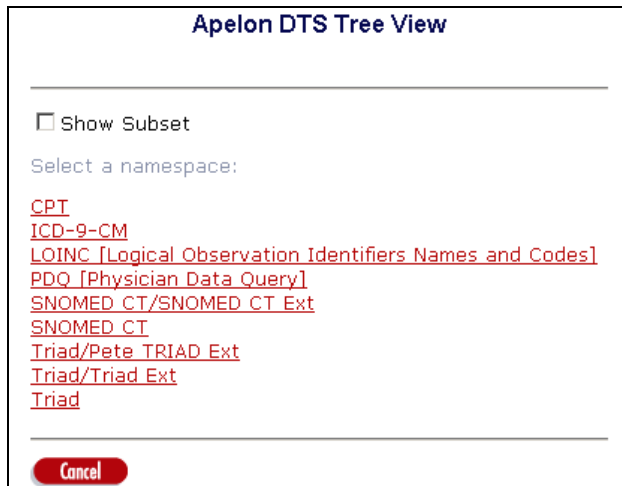
Select and Customize the Tree View

After you log in and establish a (server or JDBC) connection, follow one of the two procedures that follow to customize the desired view of the namespace tree.

Ontylog Tree View

Follow this procedure to select a namespace for which you can display a tree that reflects an **Ontylog** view of the concepts within. This type of tree displays the hierarchy of superconcepts (parent concepts) and subconcepts (child concepts) for each concept in the namespace.

The tree display parameters are stored in a "cookie." Before you use the tree view, ensure that **cookies** are turned on for your browser (refer to your browser's documentation).

1. To view an Ontylog hierarchy tree of concepts in a namespace, click the desired namespace link in the *Apelon DTS Tree View* panel. Each namespace represents a separate concept source terminology for which you view a formatted tree (and within which you can perform a concept search). Your knowledgebase can consist of unlimited namespaces (terminologies).

   Apelon DTS Tree View

   ☐ Show Subset

   Select a namespace:

   CPT
   ICD-9-CM
   LOINC [Logical Observation Identifiers Names and Codes]
   PDQ [Physician Data Query]
   SNOMED CT/SNOMED CT Ext
   SNOMED CT
   Triad/Pete TRIAD Ext
   Triad/Triad Ext
   Triad

   Cancel

   An Ontylog tree displays for the selected namespace after you select the namespace link. Refer to the *Navigate Concept Tree* discussion later in this section for tree navigation details.

2. Click **Cancel** to revert to the previously selected namespace, and display a tree for that namespace.

Association Tree View

Follow this procedure to view and/or customize a tree based on a chain of associations (i.e., a tree that reflects relationships between concepts in a non-hierarchical view).

1. To view an association tree, click the desired Thesaurus namespace (e.g., **CRISP Thesaurus**) listed in the *Apelon DTS Tree View* panel.

2. An Association tree displays for the selected namespace after you select the namespace link. The default association type in this tree configuration is **Parent of**. To modify the default association, click the **Advanced** option in the **Menu** bar of the *DTS Browser* window. The *Advanced Tree View* panel displays.

3. From the *Select a namespace for association type* dropdown field, you must designate the **namespace** in the knowledgebase that contains the type of association you want to view. This is the namespace where the association itself was created.
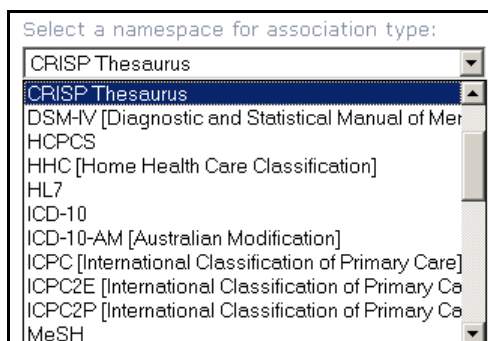
4. In the *Select an association type* dropdown field, select the type of association for which the tree will be customized. The list includes only those associations that were created in the namespace you selected in the previous field.
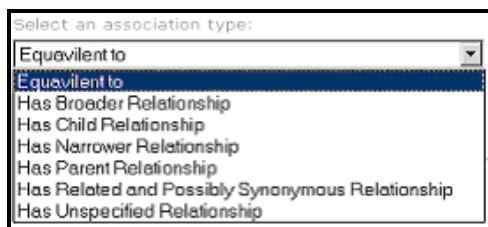
5. After you select the namespace and association type for which to build a tree, you can perform a search for concepts to which the association applies (referred to as the **focus concept**) as well as the namespace where the search will occur. In the *Select a namespace for focus concept* dropdown field, select the namespace where the focus concept search will be performed. This namespace can be different from the one in which the association type you selected (in the previous step) was created.
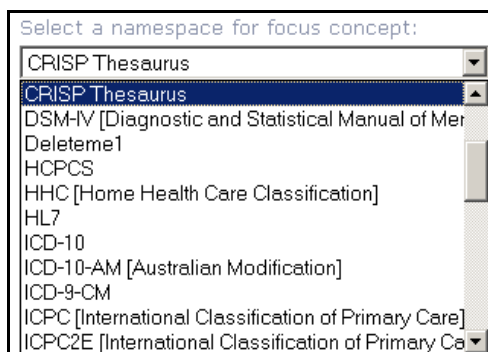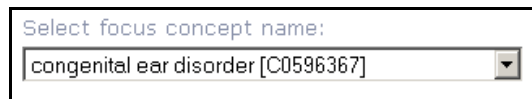
6. In the *Search for a focus concept* field, enter the search string for the concept for which the search will be conducted (use "wildcards" as necessary). The namespace you selected in the previous field will be searched for concepts with the association you designated earlier.
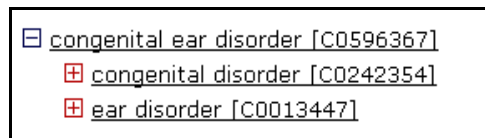
Search for a focus concept:
ear disorder [Go!]

7. Click **Go!** The results of the focus concept search are listed in the *Select focus concept name* dropdown field. As the default, up to 100 concepts are returned from the search.

Select focus concept name:
congenital ear disorder [C0596367] ▼

Select the **focus concept** on which to base the association tree view. This sets the starting point (i.e., root, or threshold) for the chain of associations to be displayed. Note the illustration.

⊟ congenital ear disorder [C0596367]
   ⊞ congenital disorder [C0242354]
   ⊞ ear disorder [C0013447]

8. Click **View Tree** to save the configuration and display the tree. Click **Cancel** to revert to the previously viewed tree configuration, and display a tree based on those earlier view parameters.

Refer to the *Navigate Concept Tree* discussion for tree navigation details.

Navigate Concept Tree

After you complete your Ontylog or Association tree view configurations, the results display in the *Concept Tree* panel. This panel displays a tree (i.e., hierarchy) of namespace concepts based on the namespace you selected (Ontylog) or the association configuration you specified (chain of associations).

The tree unfolds in an expandable and collapsible format for easy viewing. When the *Concept Tree* panel opens, the collapsed view displays only the top-level concepts (**nodes**) of the tree. To expa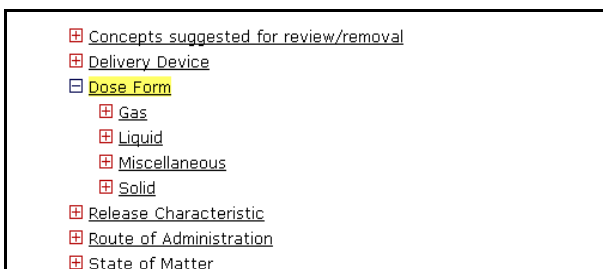nd a concept selection and display lower nodes, click the **Expand** button ⊞ next to the concept; click the **Collapse** button ⊟ to hide the lower nodes.

Note the following section of an Ontylog tree, when the top-level concept **Dose Form** (highlighted) is expanded.

```
⊞ Concepts suggested for review/removal
⊞ Delivery Device
⊟ Dose Form
    ⊞ Gas
    ⊞ Liquid
    ⊞ Miscellaneous
    ⊞ Solid
⊞ Release Characteristic
⊞ Route of Administration
⊞ State of Matter
```

When expanded, the concepts display in a hierarchical scheme, or taxonomy. The nodes immediately above a concept are **direct superconcepts** (parents); the nodes immediately below are **direct subconcepts** (children).

In the illustrated tree, note the highlighted concept **Dermal Spray**.

```
⊞ Concepts suggested for review/removal
⊞ Delivery Device
⊟ Dose Form
    ⊟ Gas
        Anesthetic Gas
        ⊞ Gas for Inhalation
        Inhalation Vapour Capsule
        Inhalation Vapour Ointment
        Inhalation Vapour Tablet
    ⊟ Liquid/Gas
        ⊟ Dermal Spray
            ⊞ Aerosol
            Cutaneous Powder Spray
            ⊞ Cutaneous Solution Spray
            Cutaneous Suspension Spray
        Ear Spray
        ⊞ Foam
        ⊞ Inhalant (Liquid/Gas)
        Inhalation Vapour Solution
        Nasal Spray
        Vaginal Spray
    ⊞ Liquid
    ⊞ Miscellaneous
```

The following concepts are **direct subconcepts** of **Dermal Spray**.

- Aerosol

- Cutaneous Powder Spray

- Cutaneous Solution Spray

- Cutaneous Suspension Spray

Dermal Spray is, in turn, a direct subconcept of **Liquid/Gas**.

Of the 4 direct subconcepts of **Dermal Spray**, only **Aerosol** and **Cutaneous Solution Spray** have subconcepts (indicated by the **Expand** button ⊞ or the **Collapse** button ⊟ adjacent to **Aerosol** and **Cutaneous Solution Spray**).

A concept with no **Expand** ⊞ or **Collapse** ⊟ button next to it has no subconcepts.

To collapse all displayed lower-level nodes in the tree and display only top-level concepts, click the **Collapse** option in the **Menu** bar.

To display an Ontylog tree for an alternate namespace, click the **Tree** option in the **Menu** bar to redisplay the *Apelon DTS Tree View* panel.

To configure a tree for an association view, click the **Advanced** option in the **Menu** bar to redisplay the *Advanced Tree View* panel.

To refresh your Browser view, right-click in the display area and select **Refresh**.
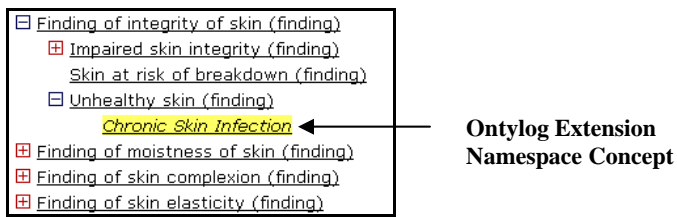

View Concepts in an Ontylog Extension Namespace Tree

You can select an **Ontylog Extension** namespace for view in the *Concept Tree* panel. Each Ontylog Extension namespace is an **extension** of a specific Ontylog subscription namespace, created in the DTS Editor for the purpose of creating/maintaining new local content for the linked Ontylog subscription namespace.

The Extension namespace is comprised of **supplemental** content created locally in the DTS Editor, content that was **classified** against the linked Ontylog subscription content. Refer to the *Ontylog Extension Namespaces and Extension Namespace Classification in DTS* document for procedures on creation and classification of Ontylog Extension namespaces.

When you select an Extension namespace for view in the DTS Browser *Concept Tree* panel, the displayed hierarchy for that Extension namespace reflects both the linked Ontylog subscription namespace concepts, **and** concepts from the Extension namespace. The Extension namespace does not display as a stand-alone hierarchy; rather, Extension namespace concepts display in *italics* to distinguish them in the hierarchy from Ontylog subscription namespace concepts.

Note the illustrated portion of an Ontylog Extension namespace. The concept in italics was created in the Extension namespace, but is reflected within the hierarchy of the linked Ontylog subscription namespace.

Ontylog Extension
Namespace Concept

View Concepts in a Namespace Subset

Using the **Subset Editor** module available in the DTS Editor, you can create subsets of subscription, local, or Ontylog Extension namespaces. Each subset is comprised of concepts selected from a designated namespace based on the filter parameters that you define. Refer to the *Subset Editor Users Guide* for procedures on creating and maintaining subsets.

In the DTS Browser you have the option to highlight within the selected namespace hierarchy those concepts that exist within one or more of its subsets. Click the *Show Subset* checkbox on the *Apelon DTS Tree View* panel.

Show
Subset
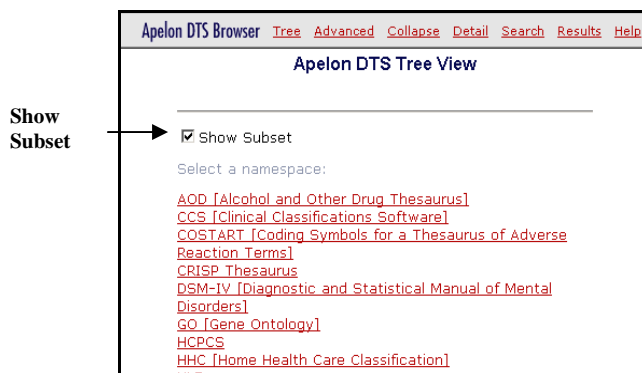
Click the desired namespace to view its subsets.
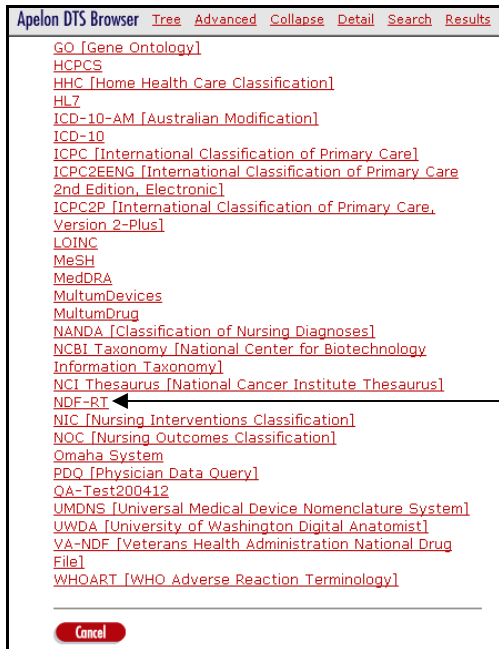
Subsets of the selected namespace are listed.

Click the desired subset. The namespace concept hierarchy displays, with each concept that belongs to the selected subset highlighted in gold text.
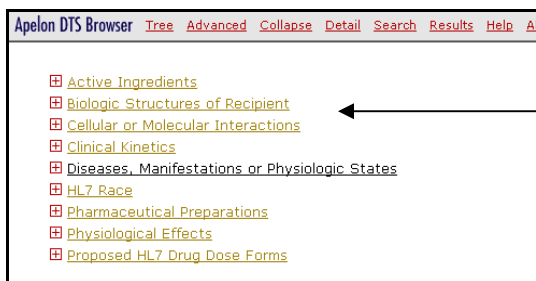
For an Ontylog namespace (local, subscription, or extension) you also can view the concept hierarchy within the subset itself. Click the *Subset Hierarchy* checkbox (enabled only for Ontylog and Ontylog Extension namespaces) then click a listed subset.

Click to View Subset Hierarchy

All concepts in the subset hierarchy are in gold text.

Display Concept Detail

The DTS Browser allows you to retrieve detail information for any concept displayed in the *Concept Tree* panel in the left pane of the *DTS Browser* window, or any concept retrieved from a search. You can customize which detail attributes will be included in the detail view; the default is for **all** detail attributes to be displayed for each concept.

The concept detail display parameters are stored in a "cookie." Before you use the detail view, ensure that **cookies** are turned on for your browser (refer to your browser's documentation.).

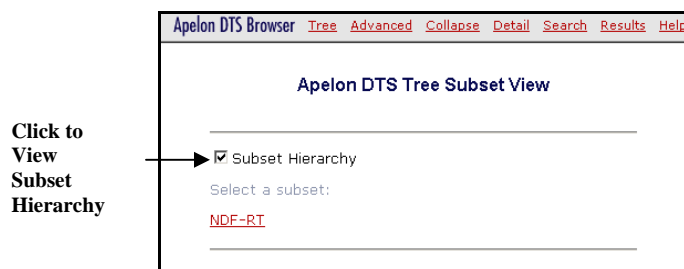### Customize Concept Detail View

Follow this procedure to customize the detail view for selected concepts.

1. Click the **Detail** option in the *DTS Browser* window **Menu** bar. The *Customize Detail View* panel displays in the right pane of the *DTS Browser* window.
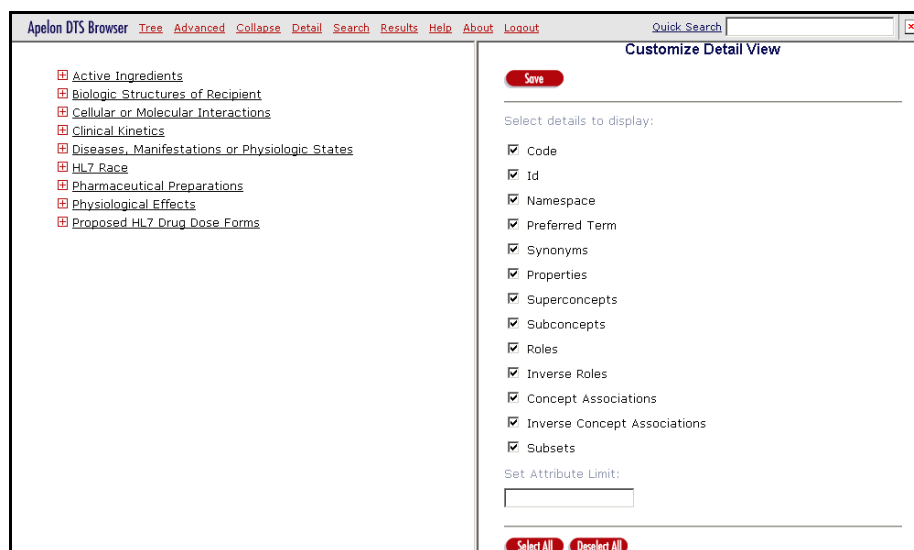
Listed on the *Customize Detail View* panel are all of the available detail view options; **all** of the options are selected as defaults.

---

2. Click on the checkbox adjacent to each undesired detail option to remove that detail item from the generated view. In the illustration, the detail options **Synonyms, Concept Associations**, and **Inverse Concept Associations** have been "deselected."

If you want to select a small number of details to display in the view, click **Deselect All**, then select those specific details you want included.

3. Click **Select All** to select all of the details for the detail view.

4. In the *Set Attribute Limit* field, you have the option to set a limit for the number of attributes that will display for each selected detail component for a concept. For example, if you specify **10**, the displayed details will list up to 10 properties, 10 roles, 10 associations, etc. Specify the desired attribute limit (up to **9999**).

5. Click **Save** to save the view configuration. The message **Click on a concept in the tree to see detail** displays.

Thereafter (during the current session, and also in subsequent sessions) each detail view of a concept will reflect this configuration until you modify the settings. To modify these settings, click the **Detail** option in the **Menu** bar to redisplay the *Customize Detail View* panel, then select your new detail view configuration.

View Concept Details

After you complete your *Concept Detail* panel configuration, click on any **concept name** (not the **Expand** button ⊞) displayed in the *Concept Tree* panel to display detailed concept information in the *Concept Detail* panel. The view format is based on the current concept detail view configuration. The concept you select for detail view is highlighted in yellow in the *Concept Tree* panel.

Note the detail illustrated for the concept **Impaired skin integrity (finding)**, which is a subconcept of the parent concept **Finding of integrity of skin (finding)** in this namespace hierarchy.

You also can click on any concept retrieved from a search to display concept detail. Up to 100 items can display for each detail attribute (e.g., 100 **Properties**, 100 **Roles**, etc.). Depending on your concept detail view configuration, the following detail information displays for each concept you select.

Code

A concept code is a concept identifier (along with the concept name and concept ID) generated automatically in the namespace. A concept code is created and assigned to each new concept you create using Apelon's DTS Editor or Ontylog Editor (TDE).

Id

A concept ID is a concept identifier (as are the concept name and concept code) generated automatically in the namespace. A concept ID is created and assigned to each new concept you create using Apelon's DTS Editor or Ontylog Editor (TDE).

Namespace

The concept namespace; each namespace represents a terminology source in the knowledgebase.

Preferred Term

For a concept in a tree, a **Preferred Term** may be listed. This is a term that is synonymous with the concept you selected for detail display, and which was designated as the preferred means by which to reference the concept.

Synonyms

If a concept in a tree has one or more **synonymous terms** associated with it, these terms are listed. One of these synonymous terms may be designated as the **Preferred Term**. The synonymous term displays in *italics* if the synonym was created in a local (non-subscription) namespace, for a concept in a subscription namespace.

Properties

A property is a piece of user-defined internal or auxiliary information that can be attached to a concept (e.g., documentation code, numeric code, alpha code) and has no bearing on knowledgebase classification in TDE. The property consists of a combination of an established property definition and its value. A concept can have unlimited property definitions assigned to it, each with its own value.

In the illustration, **definition**, **examples**, **record_type**, **tree_number**, **unique_ identifier**, and **usage_notes** all are property definitions (these are highlighted in color) and each definition has an associated value. A concept can have multiple occurrences of the same property definition (e.g., **record_type**) as long as each occurrence has a different value (e.g., **STY**, **DOC**, etc.). The property type and value display in *italics* if the property was created in a local (non-subscription) namespace, for a concept in a subscription namespace.

Superconcepts

In an Ontylog tree, a superconcept is a parent concept of the concept you selected for detail view. Note the illustration, in which **Impaired skin integrity (finding)** (highlighted in the *Concept Tree* panel) is selected for detail view.

Finding of integrity of skin (finding) is the superconcept of **Impaired skin integrity (finding)**. You can, in turn, display detail information for each superconcept by clicking the desired concept name. If a top-level concept is in the detail view, the superconcept is referenced as **none**.

Subconcepts

In an Ontylog tree, a subconcept is a child concept of the concept you selected for detail view. In the illustration, **Impaired skin integrity (finding)** is highlighted in the *Concept Tree* panel as being selected for detail view.

The child concept (subconcept) of **Impaired skin integrity (finding)** is **Skin incision finding (finding)**. You can, in turn, display detail information in the *Concept Detail* panel for each of these subconcepts by clicking the desired concept name.

Roles

A concept in an Ontylog tree may have one or more **roles** associated with it. A concept's kind indicates the concept type (e.g., the concept is a **substance**, a **procedure**, a **state**). A role is a mapping between two kinds (e.g., the role **substance measured** could be one that maps a concept with a **procedure** kind to one that with a **substances** kind.

The role modifier (**all**, **some**, or **poss**) displays for each concept. Roles that are organized into groups display under the appropriate role group title.

Inverse Roles

A concept in an Ontylog tree may have one or more **roles** associated with it (note the **Roles** definition). For each role mapping that a concept has to another concept (kind) a reverse mapping is created.

Concept Associations

A concept in a tree may be associated with one or more other concepts, in other namespaces. For the concept in the detail view, each concept to which it has an association is listed, along with the type of association (e.g., **NarrowerThan**). Click on the listed associated concept to display that concept in the detail view. The associated concept, as well as the association type for a concept in a subscription namespace, display in *italics* if the association was created in a local (i.e., non-subscription) namespace.

```
Concept Associations
LocalAssociationType  LocalConcept1
```

Refer to the *DTS Editor Users Guide* for procedures on creating new associations.

Inverse Concept Associations

A concept in a tree may be associated with one or more other concepts, in other namespaces. For the concept in the detail view, each concept to which it has an association is listed, along with the type of association. For each association that a concept has (e.g., **NarrowerThan**) a reverse association (e.g., **BroaderThan**) is created. Click on the listed inverse association concept to display that concept in the detail view.

Subsets

A concept in a tree may be included in one or more subsets of the selected namespace. If this is the case, all subsets in which the concept is included are listed in gold text.

```
Subsets
NDF-RT
```

View Details for an Ontylog Extension Namespace Concept

When you select an Ontylog Extension namespace concept for detail view in the *Concept Detail* panel, the linked Ontylog subscription namespace is referenced within the displayed concept details. The linked Ontylog subscription namespace displays in brackets for the **Superconcept**, **Subconcept**, **Role**, **Association**, and **Synonym** attributes.

In the illustration, note that the linked Ontylog subscription namespace (**SNOMED CT**) is referenced in the attributes for the selected Ontylog Extension namespace concept.

If you select a concept for detail view that is from the original Ontylog subscription namespace, any superconcepts or subconcepts for that concept that were created in the Extension namespace are referenced in the detail.

Knowledgebase Searches

Overview

The DTS Browser allows you to search all namespaces, or a specific namespace, for the specific search string that you specify. Based on the search criteria that you define, you can make each search as broad or as specific as you need.

You also can perform searches within knowledgebase **silos**. You generate silos by running the **Selector and Extractor** utility, which populates the silos with data from one or more namespaces; refer to the *Knowledgebase Silos and Selectors & Extractors* discussions in the *Knowledgebase Administrators Guide*. Depending on the established configurations for acquiring silo data from the knowledgebase, search results from a single silo can reflect data from multiple namespaces.

You also can search a **subset** of a namespace for concept names that match your search string. Each subset is comprised of concepts chosen from a specific namespace based on the selection criteria that you define.

Click **Search** in the **Menu** bar of the *DTS Browser* window. The *Search Apelon DTS* panel displays in the right pane of the window.

The DTS Browser offers two types of searches, **regular** searches and **quick** searches. Each search method is discussed.

Regular Searches

Use the regular search method when your search criteria include only a **single** concept attribute category (i.e., Name **or** Properties **or** Roles) and also require that you enter specific criteria for **each individual search**. For each search, you specify the text string for which to search, and also indicate if you want to search one or more **namespaces**, a specific **subset**, or a specific **silo** for search string matches.

For a subset search, you can search for concept names that match your search text string. Each subset can be comprised of concepts from a Subscription, Local, or Ontylog Extension namespace.

For namespace searches, you must select **one** of the following search categories:

> * **Name and Synonyms**
> * **Name**
> * **Synonyms**
> * **Roles**
> * **Inverse Roles**
> * **Properties**
> * **Concept Associations**
> * **Inverse Concept Associations**

After you select the broad category for the namespace search (e.g., roles, properties) you can specify more specific search criteria (e.g., one or more specific roles, properties, etc.) within which to perform the search. Concepts for which all of your namespace search criteria are met are retrieved and displayed in a *Search Results* panel. You have the option of limiting the number of retrieved concepts to the maximum that you specify.

Quick Searches
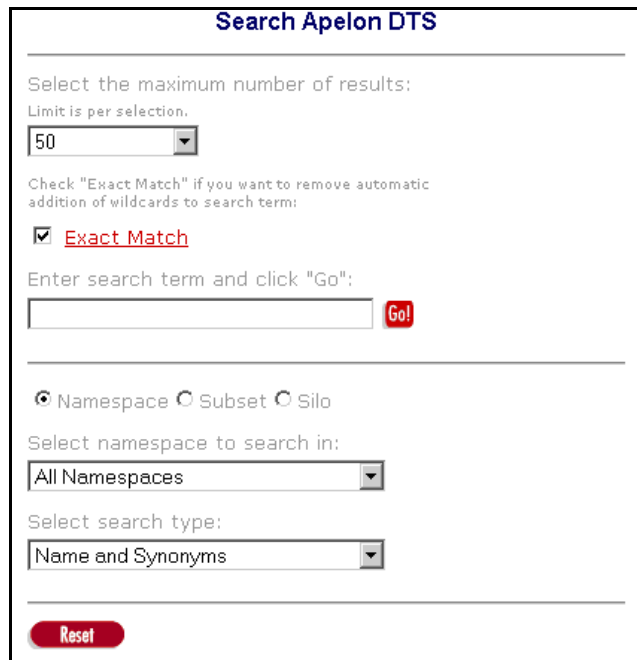
Use the **quick search** method when your search criteria include **multiple** concept attributes (e.g., Name **and** Properties **and** Roles). The quick search method also allows you to define a set of custom search parameters that you can **save and reuse** for subsequent searches. As in regular searches, you can customize subset searches to match concept names in the subset to your search text string. For namespace and silo searches, you can specify one or more of the following attribute categories for concept name and synonym matching:

> * **Name**
> * **Synonyms**
> * **Roles**
> * **Inverse Roles**
> * **Properties**
> * **Concept Associations**
> * **Inverse Concept Associations**
> * **Silos**

Perform (Regular) Searches

The following is a broad procedural discussion regarding regular searches of your knowledgebase for concepts that contain the search term string you specify. Procedures for performing specific types of searches are presented later in this section.

1. Click **Search** in the **Menu** bar of the *DTS Browser* window. The *Search Apelon DTS* panel displays in the right pane of the window.

2. Set the maximum number of retrieved results **for each search** in the *Maximum Results* field.

You can specify that the search be completed as soon as **50** (the default) **100**, or **250** concepts that match the search criteria have been retrieved for each search, or specify your own maximum number.

If you anticipate numerous results from a Search, you should select **Enter a number**, then specify a large value. When you select **Enter a Number** an entry box displays.

Enter the number you want as the limit for search results (this must be a whole number up to **9999**). Do not enter alphabetic characters or punctuation marks.

Note: If you are searching a large namespace, subset, or silo, or if you enter very broad search criteria, and you set *Maximum Results* to a low value, the search may terminate before the item you need is located. If you frequently find that the item you are seeking is not being displayed in the search results, increase the *Maximum Results* value and make your search criteria more specific to reduce the number of resulting items.

3. In the *Search Term* field, enter the search text you want to locate for the specified category and criteria parameters. Note the illustration.
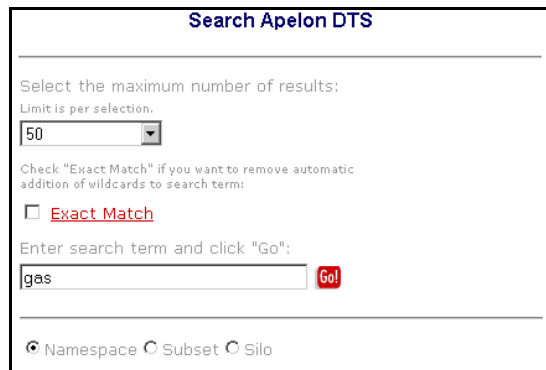
Search Term

The terms you specify for the search string are case **insensitive**. However, the retrieved results are case **sensitive**; two concept names can share the identical text string, as long as one character in either string is distinct in case. For example, a search on the text string **gas** would return the results **GAS**, **Gas**, and **gas**, each result representing a different concept.
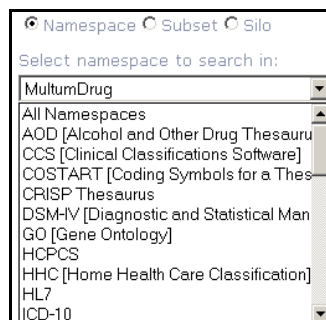
Normally the search employs a "wildcard" approach to a search. When you enter the term for which the search will be conducted, the wildcard character ***** is added to the end of the text (e.g., **brain***). Any item that **begins** with your search text is returned from the search. If there are no matches, the wildcard character ***** is added to the beginning of the text as well (e.g., ***brain***). Any item that **contains** the search text is returned.

If the *Exact Match* checkbox is checked (the default) the wildcard search is not used. All items returned from the search must match your search text **exactly**. If the Exact Match does not return the information you need, rerun the search with Exact Match turned off (this adds the wildcard search character ***** back onto your search text).

4. Click the option that reflects where you want to perform the search (*Namespace*, *Subset*, or *Silo*).
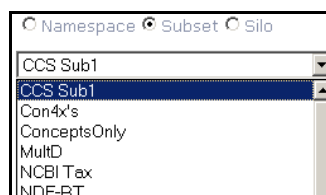
If you select *Namespace*, the accompanying dropdown lists all namespaces in your DTS knowledgebase.

Click the desired namespace in which you want to perform the search; the default, **All Namespaces**, applies if you want to search in all existing namespaces.

Note that if you select an Ontylog Extension namespace to search, returned results will be from the Extension namespace only (no concepts from the linked Ontylog subscription namespace will be returned). Refer to the *Ontylog Extension Namespaces and Extension Namespace Classification in DTS* document for more on Extension namespaces.

If you select a *Subset* in which to perform a concept name search, the accompanying dropdown lists all subsets that were created for namespaces in your DTS knowledgebase.

Each **silo** in DTS is a repository of customized concept data acquired from your knowledgebase, and optimized for searching. If you select a *Silo* in which to search, the accompanying dropdown list includes all namespace silos that were created in your DTS knowledgebase. Click the desired silo in which to search.

5. Select the broad type (i.e., category) for your namespace search. Click the arrow in the top line of the *Select search type* field to display the option list.

Select search type:

Name and Synonyms
Name and Synonyms
Name
Synonyms
Roles
Inverse Roles
Properties
Concept Associations
Inverse Concept Associations
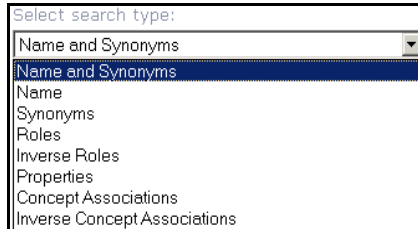
All search types available in your current knowledgebase are listed; click the desired type on which to base your search. The possible search types are listed.

- Concept **Name and Synonyms**

- Concept **Name**

- **Synonyms**

- **Roles**

- **Inverse Roles**

- **Properties**

- **Concept Associations**

- **Inverse Concept Associations**

Search examples using each of these types as a search parameter are provided later in this section.

7. Based on the search type you selected, you may have to select more specific criteria for your search. For example, if you selected **Properties** as the search type, you must select **which** property (or properties) will be searched for the term string you specify; the available properties in the knowledgebase are listed.

Press Ctrl for multiple selections:

definition
entryTerm
examples

Click the arrow on the top line to display the option list of *Criteria* related to the search type you selected. The list that displays depends on which search type you selected (e.g., if you selected **Roles** as the search type, all knowledgebase roles are listed, if you selected **Properties**, all properties are listed, etc.).

8. Click the criteria option on which you want to search. You have the option of broadening the search by selecting more than one option using the normal *Windows* selection procedures. For example, to select two or more nonadjacent properties, click the name of one property, hold down **Ctrl**, then click the name of each additional property. Each property you select is highlighted.

To select adjacent properties, click the name of the first property in the list, hold down **Shift**, then click the name of the last property in the list. All the properties between the first and last are highlighted.

9. The *Word Matching* search feature works in conjunction with the property search. It allows you to perform a search for a concept based on property when you do not know the property's exact (search string) value.
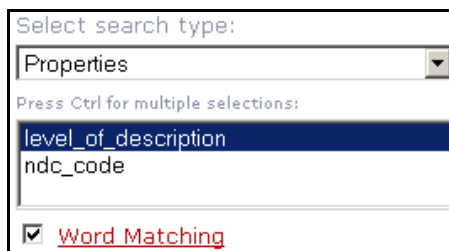
If you specify as the search string those words you believe apply to the property value, the search will retrieve all concepts that contain those words, in any arrangement, as part of the selected property. Refer to the *Search For Concepts Using the Word Match Feature* procedures later in this section.

10. Click **Go!** to begin the search.

Click to Begin Search

Search results are returned and displayed in the *Search Results* panel in the right pane of the *DTS Browser* window. Note the concepts returned from a property search in a selected namespace based on the search string **gas**.

```
                        Search Results

   Search

   Search Term: gas
   Number of Results: 6

   "Element, Ion, or Isotope" [UMLS Semantic Types]
   Biologically Active Substance [UMLS Semantic Types]
   Body Substance [UMLS Semantic Types]
   Congenital Abnormality [UMLS Semantic Types]
   Enzyme [UMLS Semantic Types]
   Hormone [UMLS Semantic Types]
```

The *Search Results* panel indicates the search term, as well as the total number of
returned concepts. The namespace in which each returned concept was found is
listed.

To perform another search, click **Search**. When the *Search* panel redisplays, the
most recent set of search parameters is retained. You can modify the previous
parameters and perform another search. If you want to specify an entire new set
of search parameters, click **Reset** on the *Search* panel to clear all previous
parameters.

Click **Results** in the *DTS Browser* window **Menu** bar to display search results
based on the previous set of search criteria.

```
                     Last Search Results

   Search

   Search Term: gas
   Number of Results: 5

   Gases, blood, O2 saturation only, by direct measurement, except
   pulse oximetry [82810] [CPT]
   Gases, blood, any combination of pH, pCO2, pO2, CO2, HCO3
   (including calculated O2 saturation) [82803] [CPT]
   Gases, blood, any combination of pH, pCO2, pO2, CO2, HCO3
   (including calculated O2 saturation); with O2 saturation, by
   direct measurement, except pulse oximetry [82805] [CPT]
   Gases, blood, pH only [82800] [CPT]
   Gastrectomy, partial, distal; with formation of intestinal pouch
   [43634] [CPT]
```

You can display details for each concept returned from the search by clicking the
concept name. Note the *Concept Detail* panel for the returned concept **Element,
Ion, or Isotope**; the value for the property **definition** contains the text string (**gas**)
that matches the search term.

```
"Element, Ion, or Isotope"

Code: C185
Id: 185
Namespace: UMLS Semantic Types

Preferred Term
none

Synonyms
none

Properties
definition          "One of the 109 presently known fundamental
                    substances that comprise all matter at and above the
                    atomic level. This includes elemental metals, rare
                    gases, and most abundant naturally occurring
                    radioactive elements, as well as the ionic counterparts
                    of elements (NA+, Cl-), and the less abundant isotopic
                    forms. This does not include organic ions such as
                    iodoacetate to which the type 'Organic Chemical' is
                    assigned."
examples            Carbon; Chromium Isotopes; Cobalt Radioisotopes;
                    Deuterium; Radioisotopes; Uranium
record_type         STY
tree_number         A1.4.1.2.3
unique_identifier   T196
usage_notes         Carbon; Chromium Isotopes; Cobalt Radioisotopes;
                    Deuterium; Radioisotopes; Uranium

Superconcepts
Chemical Viewed Structurally
```

Property value "gases" contains the search string "gas"

Search for Concepts Based on Concept/Synonym Names

Follow this procedure to search for concepts for which the concept name, or the name of a concept synonym, include the search string you specify.

1. In the *Maximum Results* field, select the maximum number of concepts to be retrieved from the search.

2. In the *Search Term* field, specify the concept name or synonym name (i.e., search string) on which to base the search.

3. Click the option that reflects where you want to perform the search (the default, *Namespace*, in this case). The accompanying dropdown lists all namespaces in your DTS knowledgebase. Click the desired namespace in which you want to perform the search; the default, **All Namespaces**, applies if you want to search in all existing namespaces.

4. From the *Select search type* dropdown list, select *Name and Synonyms*.

    Note the illustration when **amebiasis** is the search string for a namespace search.

---

5. Click **Go!**. Each concept in the selected namespace that has a name, or that has a synonym with a name, that includes the search string **amebiasis** is listed in the *Search Results* panel. The namespace in which each returned concept was found is listed.

To perform another search, click **Search** to redisplay the *Search Apelon DTS* panel.

Search for Concepts Based on Concept Name

Follow this procedure to search for concept names that contain your search string.

1. In the *Maximum Results* field, select the maximum number of concepts to be retrieved from the search.

2. In the *Search Term* field, specify the text string for which you want to search for concept name matches.

3. Click the option that reflects where you want to perform the search (the default, *Namespace*, in this case). The accompanying dropdown lists all namespaces in your DTS knowledgebase. Click the desired namespace in which you want to perform the search; the default, **All Namespaces**, applies if you want to search in all existing namespaces.

4. From the *Select search type* dropdown list, select *Name*. Note the illustration when **vapour** is the search string for a namespace search.

5. Click **Go!**. Each concept in the selected namespace with a name that contains the search string **vapour** is listed in the *Search Results* panel. The namespace in which each returned concept was found is listed.

To perform another search, click **Search** to redisplay the *Search Apelon DTS* panel.

Search for Concepts Based on Synonym Name

Follow this procedure to search for concepts with synonym names that include your search string.

1. In the *Maximum Results* field, select the maximum number of concepts to be retrieved from the search.

2. In the *Search Term* field, specify the text string for which you want to search for synonym name matches.

3. Click the option that reflects where you want to perform the search (the default, *Namespace*, in this case). The accompanying dropdown lists all namespaces in your DTS knowledgebase. Click the desired namespace in which you want to perform the search; the default, **All Namespaces**, applies if you want to search in all existing namespaces.

4. From the *Select search type* dropdown list, select *Synonyms*. Note the illustration when **Chronic intestinal amebiasis** is the search string for a namespace search.

5. Click **Go!**. Each concept in the selected namespace with a synonym name that contains the search string **Chronic intestinal amebiasis** is listed in the *Search Results* panel. The namespace in which each returned concept was found is listed.

Click **Search** to redisplay the *Search Apelon DTS* panel for another search.

Search for Concepts with Selected Role (Concept Target) Values

Follow this procedure to search for concepts that have one or more selected role values (i.e., target concept names) that contain the search string you specify.

1. In the *Maximum Results* field, select the maximum number of concepts to be retrieved from the search.

2. In the *Search Term* field, specify the text string for which the selected roles will be searched for matching values.

3. Click the option that reflects where you want to perform the search (the default, *Namespace*, in this case). The accompanying dropdown lists all namespaces in your DTS knowledgebase. Click the desired namespace in which you want to perform the search; the default, **All Namespaces**, applies if you want to search in all existing namespaces.

4. From the *Select search type* dropdown list, select *Roles*. Note the illustration when **Finding site (attribute)** is the selected role, and **rib** is the search string for a namespace search.

5. Click **Go!**. For the selected role type(s), each concept in the selected namespace with one or more role values that contain the search string **rib** is listed in the *Search Results* panel. The namespace in which each returned concept was found is listed.

To perform another search, click **Search** to redisplay the *Search Apelon DTS* panel.

Search for Concepts with Selected Inverse Role Values

Follow this procedure to search for concepts that have one or more selected inverse role values that match the search string you specify.

1. In the *Maximum Results* field, select the maximum number of concepts to be retrieved from the search.

2. In the *Search Term* field, specify the text string for which the selected inverse roles will be searched for matching values.

3. Click the option that reflects where you want to perform the search (the default, *Namespace*, in this case). The accompanying dropdown lists all namespaces in your DTS knowledgebase. Click the desired namespace in which you want to perform the search; the default, **All Namespaces**, applies if you want to search in all existing namespaces.

4. From the *Select search type* dropdown list, select *Inverse Roles*. Note the illustration when **Finding site (attribute)** is the selected inverse role, and **rib** is the search string for the namespace search.

Selected Inverse Role Type

5. Click **Go!**. For the selected inverse role type(s), each concept with one or more inverse role values in the selected namespace that contain the search string ***rib*** is listed in the *Search Results* panel. The namespace in which each returned concept was found is listed.

Click **Search** to redisplay the *Search Apelon DTS* panel for another search.

Search for Concepts with Selected Property Values

Follow this procedure to search for concepts that have one or more selected properties with values that contain the search string you specify.

1. In the *Maximum Results* field, select the maximum number of concepts to be retrieved from the search.

2. In the *Search Term* field, specify the text string for which the selected properties will be searched for matching values.

3. Click the option that reflects where you want to perform the search (the default, *Namespace*, in this case). The accompanying dropdown lists all namespaces in your DTS knowledgebase. Click the desired namespace in which you want to perform the search; the default, **All Namespaces**, applies if you want to search in all existing namespaces.

4. From the *Select search type* dropdown list, select *Properties*. Note the illustration when **Entry Term (non-synonymous)** is the selected property, and **acid** is the search string.

Search Apelon DTS

Select the maximum number of results:
Limit is per selection.

50

Check "Exact Match" if you want to remove automatic addition of wildcards to search term:

☐ Exact Match

Enter search term and click "Go":

acid   [Go!]

◉ Namespace ◯ Subset ◯ Silo

Select namespace to search in:

ICD-9-CM

Select search type:

Properties

Press Ctrl for multiple selections:

Code in Source
Entry Term (non-synonymous)   ← Selected Property Type
ICA

☐ Word Matching

5. Click **Go!**. For the selected property type(s), each concept in the selected namespace with one or more property values that contain the search string **acid** is listed in the *Search Results* panel. The namespace in which each returned concept was found is listed.

Search Results

[Search]

Search Term: acid
Number of Results: 49

Accident caused by caustic and corrosive substances [E924.1] [ICD-9-CM]
Accidental poisoning by acids not elsewhere classified [E864.1] [ICD-9-CM]
Accidental poisoning by corrosive aromatics not elsewhere classified [E864.0] [ICD-9-CM]
Accidental poisoning by other specified gases and vapors [E869.8] [ICD-9-CM]
Accidental poisoning by salicylates [E850.3] [ICD-9-CM]

Click **Search** to redisplay the *Search Apelon DTS* panel for another search.

Search for Concepts Using the Word Match Feature

The word match search feature works in conjunction with the property search. It allows you to perform a search for a concept based on property when you do not know the property's exact (search string) value. If you specify as the search string those words you believe apply to the property value, the search will retrieve all concepts that contain those words, in any arrangement, as part of the selected property.

The word match search restricts the search to only those concepts with property definitions (**<propertyDef>**) that have been assigned the **<containsIndex/>** tag. You must assign this tag to the property definition in the database **XML** file prior to importing the file into TDE using the Data Manager, or using the Knowledgebase Type Editor. Refer to the *Normal Form Search* discussion in the *Ontylog Editor User Guide* for more on assigning the **<containsIndex/>** tag to the appropriate property definitions.

Follow this procedure to search for concepts using the word match feature.

1. In the *Maximum Results* field, select the maximum number of concepts to be retrieved from the property search.

2. In the *Search Term* field, specify the text string for which the selected properties will be searched for matching values. For the property word match search, you can specify two or more words. The search results will be those concepts for which ***all*** of the specified search string words are included in the property value (in any order) for the selected properties.

   Note: When doing a word match search, you cannot perform a "search all" wildcard search (i.e., you cannot enter a "*****" in the *Search For* field). There must be at least one other letter on which to base the word match search.

3. Click the option that reflects where you want to perform the search (the default, *Namespace*, in this case). The accompanying dropdown lists all namespaces in your DTS knowledgebase. Click the desired namespace in which you want to perform the search; the default, **All Namespaces**, applies if you want to search in all existing namespaces.

4. From the *Select search type* dropdown list, select *Properties*. Note the illustration when **Entry Term (non-synonymous)** is the selected property, **nucleic acid** is the search string, and the *Word Matching* field checkbox is checked.

Word Matching Turned On

5. Click **Go!**. For the selected property, each concept in the selected namespace with one or more property values that contain *both* the strings **nucleic** *and* **acids** (in any order) is listed in the *Search Results* panel.

Search for Concepts with Selected Concept Associations

Follow this procedure to search for concepts that have one or more selected associations, and also have, as part of the association, a **target** concept name that contains the search string you specify.

1. In the *Maximum Results* field, select the maximum number of concepts to be retrieved from the association search.

2. In the *Search Term* field, specify the text string for which association target concept names will be searched for matching values.

3. Click the option that reflects where you want to perform the search (the default, *Namespace*, in this case). The accompanying dropdown lists all namespaces in your DTS knowledgebase. Click the desired namespace in which you want to perform the search. The default, **All Namespaces**, applies if you want to search in all existing namespaces.

4. From the *Select search type* dropdown list, select *Concept Associations*. Note the illustration when **Related To** is the selected concept association, and **ascorbic acid** is the search string.

5. Click **Go!**. Each namespace concept with the selected concept association (**Related To**) that has one or more association target concepts that contain the search string **ascorbic acid** is listed in the *Search Results* panel. The namespace in which each returned concept was found is listed.

The 6 returned concepts are **from** concepts in the association **Related To**. One or more **target** concept names for each returned concept contains the search string **ascorbic acid**; the target concepts are listed in the **Concept Associations** section on the *Concept Detail* panel.

Click **Search** to redisplay the *Search Apelon DTS* panel for another search.

Search for Concepts with Selected Inverse Concept Associations

Follow this procedure to search for **to** (i.e., target) concepts that have one or more selected inverse associations, and also have as part of the association a **source** concept name that contains the search string you specify.

1. In the *Maximum Results* field, select the maximum number of concepts to be retrieved from the inverse association search.

2. In the *Search Term* field, specify the text string for which inverse association **from** (source) concept names will be searched for matching values.

3. Click the option that reflects where you want to perform the search (the default, *Namespace*, in this case). The accompanying dropdown lists all namespaces in your DTS knowledgebase. Click the desired namespace in which you want to perform the search; the default, **All Namespaces**, applies if you want to search in all existing namespaces.

4. From the *Select search type* dropdown list, select *Inverse Concept Associations*. Note the illustration when **Related To** is the selected inverse concept association, and **ascorbic acid** is the search string.

Selected Inverse Concept Association Type

5. Click **Go!**. Each **to** (target) concept in the namespace with the selected inverse association (**Related To**) that has one or more association source concepts that contain the search string **ascorbic acid** is listed in the *Search Results* panel. The namespace in which each returned concept was found is listed.

The 6 returned concepts are **to** concepts in the association **Related To**. One or more **source** concept names for each returned concept contains the search string **ascorbic acid**; the source concepts are listed in the **Inverse Concept Associations** section on the *Concept Detail* panel.

Click **Search** to redisplay the *Search Apelon DTS* panel and perform another search.

Search for Concept and Synonym Name Matches in a Knowledgebase Silo

Using the Apelon DTS Browser you can retrieve concepts from a knowledgebase **silo** that match your search parameters. Each silo is a repository of customized concept terminology data acquired from a knowledgebase, and optimized for searching. A single silo might be defined, or there may be multiple silos.

The parameters for acquiring data from your knowledgebase to populate each silo depends on the parameters defined in one or more custom configuration files you can establish. Many silos can be generated based on these configurations. Each separate silo may reflect data from an individual namespace, or a single silo may reflect data from multiple namespaces. Refer to the *Knowledgebase Silos and Selectors & Extractors* discussions in the *Knowledgebase Administrators Guide* for more on configuring and generating knowledgebase silos.

Follow this procedure to search a specific silo and retrieve concepts that match your search parameters.

1. In the *Maximum Results* field, select the maximum number of concepts to be retrieved from the silo search.

2. In the *Search Term* field, specify the text string for which the silo will be searched for matching values.

3. Click the option to search a *Silo* (note that this option is not available unless the **Selector & Extractor** utility was run). The *Search Apelon DTS* panel criteria selection options are modified, as illustrated.

Each silo may be customized to contain data from multiple namespaces. If your DTS knowledgebase administrator ran the DTS **Selector & Extractor** utility to generate knowledgebase silos, the names of the generated silos are listed in a dropdown under **select silo**. The data that populates each silo reflect the specifications in the **filterspec.xml** file.

4. From the displayed list, select the silo in which to conduct the search. Only this silo will be searched for the text string you specify.

5. At this point you can choose from a series of search features referred to as the **MatchPack** matching options.

The MatchPack options allow you to choose from three increasingly tolerant types of search matching. Based on the option you choose, silo searches return results, which are "ranked." The results with the fewest matched **tokens** are listed first (i.e., concepts that satisfy the matching criteria and contain the **fewest extraneous words** are returned first).

Matches are attempted in the order shown in the following discussions.

A. **Complete Match**: This is the most exact method of matching the text search string that you specify to a either a concept name, or the name of one of its synonyms, in the silo you selected. Complete Match is the default matching method, and is always active (even if you choose one of the other, more tolerant matching methods).

- Through Complete Match, a match occurs and a concept is retrieved when either the concept name, or the name of one of its synonyms, in the silo contains the same words as the search string you specify, in any order.

- Every concept name, or the name of a synonym, in the silo that contains all the words in the search string (in any order) is retrieved.

- Example: A search of the silo **FilterSpec1** for the string **specimen from** returned no concepts with **Complete Match** as the search method.

> There are no results for your query.
>
> [Search]

- o None of the concept names or synonym names in the specified silo contained the *specific* search string **specimen from**, so no matches were returned. Click **Search** to redisplay the *Search Apelon DTS* panel and enter alternate search parameters.

- o Note the **Under Match** and **Partial Under Match** discussions that follow for examples of how changing the matching method determines which concepts are returned from the search.

B. **Under Match**: If Under Match is activated, and **Best Match Only** also is active, Complete Match is performed first (i.e., if either the concept name, or the name of one of its synonyms, in the silo contains every word in the search string, in any order, a match occurs). If complete matches are found, *only* these matches are returned and no further matching attempt is made.

If no concept matches occur from the Complete Match, Under Match is attempted. If under matches are found, *only* these matches are returned.

If Under Match is activated, and **Best Match Only** is inactive, under matches will be returned *in addition to* the complete matches.

- Through Under Match, a match occurs and a concept is retrieved if either the concept name, or the name of one of its synonyms, in the silo matches the search string words (in any order) *and the concept name or synonym name in the silo contains words in addition to those in the search string*.

- Example: For the silo **FilterSpec1**, the search string is **specimen from**.

> **Search Results**
>
> [Search]
>
> **Search Term:** specimen from
> **Number of Results:** 10
> Abnormal presence of endometrial cells in specimen from a menopausal woman (finding)
> Cytologic material from left main bronchus (specimen)
> Cytologic material from right main bronchus (specimen)
> Specimen from blood product (specimen)
> Specimen from burn injury (specimen)
> Specimen from cyst (specimen)
> Specimen from genital system (specimen)
> Specimen from patient (specimen)
> Specimen from wound (specimen)
> Specimen from wound abscess (specimen)

- o Multiple matches occurred and concepts were retrieved for the more tolerant matching method **Under Match**.

- o Matches occurred against the search string **specimen from**, despite the fact that each returned concept name contained one or more additional words.

- When **Under Match** is selected, the order of the words in the search string is not considered in the search. Note that the identical results are returned for the search string **from specimen** (i.e., the opposite of **specimen from**).

Search Results

Search Term: from specimen
Number of Results: 10
Abnormal presence of endometrial cells in specimen from a menopausal woman (finding)
Cytologic material from left main bronchus (specimen)
Cytologic material from right main bronchus (specimen)
Specimen from blood product (specimen)
Specimen from burn injury (specimen)
Specimen from cyst (specimen)
Specimen from genital system (specimen)
Specimen from patient (specimen)
Specimen from wound (specimen)
Specimen from wound abscess (specimen)

C. **Partial Under Match**: If Partial Under Match is activated, and **Best Match Only** also is active, Complete Match is performed first (i.e., if either the concept name, or the name of one of its synonyms, in the specified silo contains every word in the search string, in any order, a match occurs). If complete matches are found, *only* these matches are returned and no further matching attempt is made.

If no matches occur from the Complete Match, Under Match is attempted. If under matches are found, *only* these matches are returned.

If no matches occur from Under Match, Partial Under Match matches are attempted. If Partial Under Match is activated, and **Best Match Only** is inactive, partial under matches will be returned *in addition to* the complete matches and under matches.

- Through Partial Under Match, a match occurs and a concept is retrieved if either the concept name, or the name of one of its synonyms, in the specified silo contains **all remaining words** (in any order) after all **stopwords** have been removed.

The following stopwords are those words that are considered as unnecessary for the search:

A
and
by
for
in
NOS
of
on
the
to
with

- Example: For the search string **attack in the heart and brain**, the string becomes **attack heart brain** because the stopwords **in**, **the**, and **and** are discarded. If the words in the modified search string match a concept name or synonym in the silo (in any order) a match is returned.

6. The **Spell Checking** option is one of the MatchPack options you can use to search the specified silo. In the event a misspelled search string is entered, spell checking generates suggested spelling variants against which matches can be attempted. If you click the *Spell Checking* field checkbox, spelling correction will occur when MatchPack attempts to match a concept with the search string you specify.
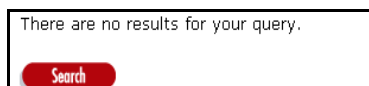
You can use spell checking regardless of the matching option you select (**Complete Match**, **Under Match**, or **Partial Under Match**). However, the number of matched concepts retrieved from the search is dependent on the matching method you select.

Example: **Complete Match** is the matching method, the silo is **FilterSpec1**, and spell checking is activated. The misspelled search string is **specemen from** (i.e., **specimen from**).

Enter search term and click "Go":

specemen from   Go!

When **Complete Match** is the matching method, no concepts are returned from the search on the misspelled search string.

There are no results for your query.

Search

If you leave spell checking turned on, and select the more tolerant search method **Under Match**, multiple matches occur for the misspelled search string.

7. After you specify the database silo search parameters, click **Go!** to begin the search of the silo you designated.

Search for Concept Name Matches in a Subset

Using the **Subset Editor** module available in the DTS Editor, you can create **subsets** of subscription, local, or Ontylog Extension namespaces. Each subset is comprised of concepts selected from a specific namespace based on your defined filter parameters. Refer to the *Subset Editor Users Guide* for procedures on creating subsets.

The Apelon DTS Browser allows you to search for subset concepts with **names** that match the search parameters you specify.

1. In the *Maximum Results* field, select the maximum number of concepts to be retrieved from the subset.

2. In the *Search Term* field, specify the text string for which the subset will be searched.

3. Click the option to search a *Subset*. The *Search Apelon DTS* panel criteria selection options change, as illustrated.

The names of all existing subsets are included in a dropdown list.

4. From the displayed list, select the subset in which to conduct the search. Only this subset will be searched for the text string you specify. Note the illustration when **ICD-9 Heart related diseases** is the selected subset, and **rheumatic** is the search string.

Subsets

5. Click **Go!**. Each concept in the selected subset with a name that contains the search string **rheumatic** is listed in the *Search Results* panel. The namespace from which each concept was selected for the subset is listed.

To perform another search, click **Search** to redisplay the *Search Apelon DTS* panel.

When Search is Completed

6. After you complete your search, you can click a concept name displayed on the *Search Results* panel to display concept detail. You also can select from the options on the *DTS Browser* window **Menu** bar. Click **Logout** to end the current session and redisplay the *DTS Browser Welcome* window. Click **Detail** to display the *Customize Detail View* panel in the right pane.

7. Click **Tree** to display the *Apelon DTS Tree View* in the left pane to select a namespace and view a tree. Click **Advanced** to display the *Advanced Tree View* panel and customize an association tree view.

Customize Quick Search

The Quick Search allows you to define a set of custom search parameters that includes **multiple** concept attributes (e.g., Name **and** Properties **and** Roles). The results that are returned based on your search parameters are cumulative. You can search all namespaces for matches, or select a single namespace or knowledgebase silo in which to search. You also can perform a concept name search within a selected subset.

After you define your Quick Search parameters you can save them. Thereafter, you can initiate searches based on these saved parameters by specifying the desired search text in the *Quick Search* text field (in the **Menu** bar of the *DTS Browser* window).

Quick Search Customization Procedure

The default Quick Search parameter for a **namespace** search is to search **all** namespaces for the search string based on concept name. Subset searches are for matching concept names only.

You can customize any saved Quick Search parameters before you actually perform a new Quick Search, then save the revised parameters for future searches. The Quick Search parameters are stored in a customization "cookie." Before you attempt to use Quick Search, ensure that **cookies** are turned on for your browser (refer to your browser's documentation), then customize the Quick Search settings by performing the following procedure.

1. Click the *Quick Search* link in the **Menu** bar of the *DTS Browser* window to customize your Quick Search parameters. The *Customize Quick Search* panel displays; note the illustration that is shown.

Customize Quick Search

Save

Select a namespace or subset to search in:

Namespace

○ | All Namespaces ▼ |

Subset (Search by concept name)

◉ | 12345 ▼ |

Select up to **5** search options:
Press Ctrl for multiple selections

Exact Matching

☑ Exact Match

Name

☑ Concept Name

Synonyms

☐ Synonymous Terms

Roles

Access (attribute)	▲
Access instrument (attribute)	
After (attribute)	▼

Inverse Roles

Access (attribute)	▲
Access instrument (attribute)	
After (attribute)	▼

Properties

Apelon Codea	▲
Code in Source	
Comments	▼

☐ Word Matching

Concept Associations

A new type - yx 1	▲
ATest	
Access (attribute)	▼

Inverse Concept Associations

A new type - yx 1	▲
ATest	
Access (attribute)	▼

Select silos to search in:
Search is by name. Namespace does not apply.

Silos

| sctBodyStructure ▼ |

○ Complete Match   ☐ Spell Checking
○ Under Match   ☐ Best Match Only
○ Partial Under Match

Select the maximum number of results:
Limit is per selection.

Maximum Results

| 50 ▼ |

Save

2. In addition to the **Namespace**, **Subset**, **Name**, **Synonyms**, and **Silos** search parameters, you can select up to a total of 5 **additional** search criteria from the attribute dropdown lists (**Roles**, **Inverse Roles**, **Properties**, **Concept Associations**, and **Inverse Concept Associations**).

   If you try to save a Quick Search configuration with more than 5 of these attributes from the dropdown lists, the following message displays.

Click to Revise Search
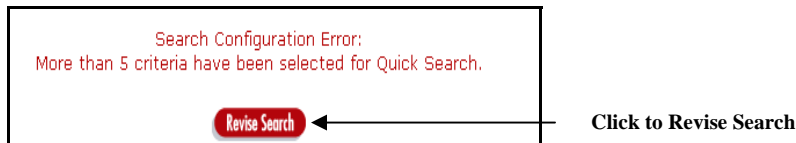
   Click **Revise Search**, then limit the search criteria to 5 attributes from the dropdowns.

Customize Quick Search of Namespaces

3. To customize a search of a namespace, click the *Namespace* field button.

Click For Namespace Searches

   Click the arrow in the top line of the *Namespace* dropdown field to display available namespaces to search. Click the desired namespace to select it (**All Namespaces** is the default).

   Note that if you choose **Silos** as one of your search criteria, the namespace(s) in which the silo search is conducted depends on the specifications established in the **filterSpec.xml** configuration files (refer to the *Matching Overview* for more on the **filterSpec.xml** configuration files). The results returned from the silo search are **in addition to** the results returned from the namespaces you select in the *Namespace* dropdown field.

Customize Quick Search for Concept Names in a Subset

4. To customize a search for concept names within a subset, click the *Subset* field button.

Click For Subset Searches
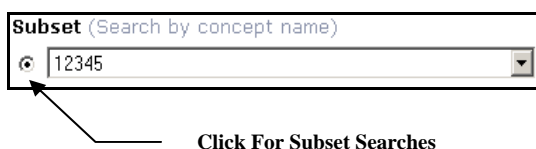
   Click the arrow in the top line of the *Subset* dropdown field to display available subsets to search. Click the desired subset to select it.

Exact Matching

5. For Quick Search, the **Exact Matching** feature functions in the same manner as for regular searches. Normally the Quick Search employs a "wildcard" approach to a search; you can click the *Exact Match* checkbox to turn off "wildcard" searches.

   When Exact Match is turned on, all items returned from the search must match your search string **exactly**. If the Exact Match does not return the information you need, click the *Exact Match* checkbox to remove the check; this turns off Exact Matching and returns the wildcard search approach back on for your search string.

Customize Quick Search of Names (Concept Names)

6. The default parameter for a Quick Search is to search based on concept name (note the check mark in the *Concept Name* checkbox). The namespaces or the subset you specified in either the *Namespace* or *Subset* dropdown field are searched for concept names that match the search text you specify in the *Quick Search* text field (in the **Header** bar of the *DTS Browser* window).

Customize Quick Search of Synonyms (Synonymous Terms)

7. You can customize Quick Search parameters that include a namespace or silo search for concepts containing the synonymous term search string value you specified in the *Quick Search* text field (in the **Menu** bar of the *DTS Browser* window).

Customize Quick Search of Roles

8. You can customize Quick Search parameters that include a namespace or silo search for concepts containing the role (i.e., target concept name) search string value you specified in the *Quick Search* text field (in the **Menu** bar of the *DTS Browser* window). Roles currently in the namespaces you selected in the *Namespace* dropdown field are listed. Click one or more roles to select them.

Customize Quick Search of Inverse Roles

9. You can customize Quick Search parameters that include a namespace or silo search for concepts containing the inverse role search string value you specified in the *Quick Search* text field (in the **Menu** bar of the *DTS Browser* window). Inverse roles currently in the namespaces you selected in the *Namespace* dropdown field are listed. Click one or more inverse roles to select them.

Customize Quick Search of Properties

10. You can customize Quick Search parameters that include a namespace or silo search for concepts containing the property search string value you specified in the *Quick Search* text field (in the **Menu** bar of the *DTS Browser* window). Properties currently in the namespaces you selected in the *Namespace* dropdown field are listed. Click one or more properties to select them.

Customize Word Matching for Quick Search

11. As is the case with regular searches, the word match search feature works in conjunction with the property search. After you click *Word Matching*, select the specific properties to be searched. Concepts containing the search string value you specified in the *Quick Search* text field, in any order, will be retrieved.
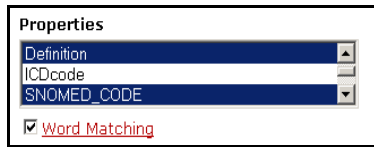
If the *Word Matching* checkbox is checked (and the *Exact Match* checkbox is unchecked) each word in the search pattern in the *Quick Search* text box is appended with a wild card (*) automatically. For example, the search patterns **metabol acidos** or **acidos metabol** will retrieve each matched concept with a property value that contains the value **metabolic acidosis**. See the earlier *Search for Concepts Using the Word Match Feature* discussion for more on property searches using word match.

Customize Quick Search of Concept Associations

12. You can customize Quick Search parameters that include a namespace or silo search for each concept that has one or more selected associations, and also has as part of the association a **target** concept name that contains the search value you specified in the *Quick Search* text field (in the **Menu** bar of the *DTS Browser* window). Concept associations currently in the namespaces you selected in the *Namespace* dropdown field are listed. Click one or more concept associations to select them.

Customize Quick Search of Inverse Concept Associations

13. You can customize Quick Search parameters that include a namespace or silo search for each **to** (target) concept that has one or more selected inverse associations, and also has as part of the inverse association a **from** (source) concept name that contains the search value you specified in the *Quick Search* text field (in the **Menu** bar of the *DTS Browser* window). Inverse concept associations currently in the namespaces you selected in the *Namespace* dropdown field are listed. Click one or more inverse concept associations to select them.

Customize Quick Search of Silos

14. You can customize a search of namespace silos that contain the value you specified in the *Quick Search* text field (in the **Menu** bar of the *DTS Browser* window). All existing silos are listed; click a silo to select it. Note that each silo can include data from multiple namespaces. Results returned from the silo search are appended to the results returned from the other search criteria from the namespace(s) you selected in the *Namespace* dropdown field.

The available **MatchPack** search options are identical to those available when you customize a Search; these options let you choose from three increasingly tolerant types of search matching. When you select a silo as one of the search parameters, you must select a matching option (**Complete Match**, **Under Match**, or **Partial Under Match**) in order to save the Quick Search configuration. Refer to the *Search For Concepts in a Knowledgebase Silo* discussions earlier in the guide.

15. You can set the maximum number of retrieved results for **each search** in the *Maximum Results* field. When the number of concepts matching the search criteria equals this number, the search ends; matched items are included in the cumulative results. The choices are **50** (the default) **100**, **250**, and **Enter a Number**. If you anticipate numerous results from a Search, you should select **Enter a Number**, then specify a large value (up to **9999**).

16. When you have finished selecting your search criteria, scroll to the top or bottom of the *Customize Quick Search* panel, then click **Save** to store the selected criteria. The following displays in the right panel of the *DTS Browser* window.

> Click on a concept in the tree to see detail.
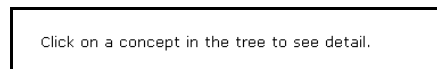
17. In the *Quick Search* field in the upper-right of the *DTS Browser* window, specify the text string for which the knowledgebase will be searched based on the search criteria.

> Quick Search | animal | Go!

18. Click **Go!** to begin the search based on the saved parameters. The retrieved concepts display on the *Search Results* panel. The namespace in which each returned concept was found is listed.

> **Search Results**
>
> **Search**
>
> **Search Term:** animal
> **Number of Results:** 5
>
> Animal (organism) [SNOMED CT]
> Animal [C0003043] [MeSH]
> Animal [UMLS Semantic Types]
> Kingdom Animalia (organism) [SNOMED CT]
> animal [C0003062] [AOD [Alcohol and Other Drug Thesaurus]]
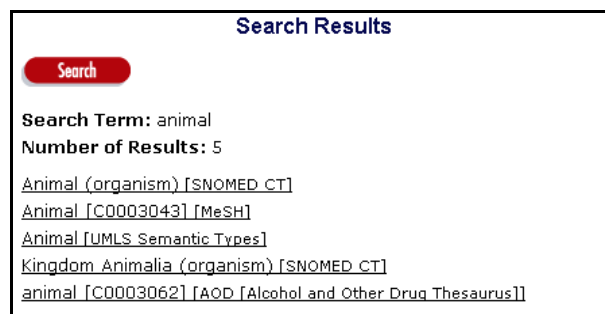
Note that if you did not specify **any** search parameters for the Quick Search, a message displays indicating this after you click **Go!**. Click **Search**, then enter one or more search parameters.

To modify your search criteria and perform another search, click the *Quick Search* link in the **Menu** bar of the *DTS Browser* window to redisplay the *Customize Quick Search* panel.

When Quick Search is Completed

After you complete your search, you can click a concept name displayed on the *Search Results* panel to display concept detail. You also can select from the options on the *DTS Browser* window **Menu** bar. Click **Logout** to end the current session and redisplay the *DTS Browser Welcome* window. Click **Detail** to display the *Customize Detail View* panel in the right pane.

19. Click **Tree** to display the *Apelon DTS Tree View* in the left pane to select a namespace and view a tree. Click **Advanced** to display the *Advanced Tree View* panel and customize an association tree view.

Common Error Messages

The following table lists some of the most common Apelon DTS error messages, as well as solutions to resolve the situations that caused them.

Error Message	Possible Cause	Solution
Timeout Error	The DTS Browser times out after 60 minutes of inactivity.	Log into DTS Browser again.
LifecycleException: null.open: java.net.BindException: Address in use	The port on which Apelon DTS is trying to run is in use currently.	Make the port available - use the Task Manager to determine if any java applications are running using the port that Apelon DTS is trying to access, then delete the application(s) to free up the port
Out of Memory	This occurs when performing searches on large Knowledge Bases (>50,000 Concepts). It indicates that the Tomcat Server does not have enough memory configured to support the search.	The "heap" memory of the Tomcat Server needs to be increased. Refer to Appendix B.
This page cannot be displayed	Tomcat Server is not running.	Start the Tomcat Server before running the DTS Browser client.
Connection to the Apelon DTS Server was not established	Apelon DTS Server is not running, or invalid logon was entered.	Ensure that the Server is running and that your logon information is correct.
Connection to the Apelon DTS Knowledgebase was not established	Knowledgebase is not available, or invalid logon was entered.	Ensure that the database is available and that your logon information is correct.
More than 5 criteria have been selected for Quick Search	You can select up to **5** search criteria from the attribute dropdown lists (**Roles**, **Inverse Roles**, **Properties**, **Concept Associations**, and **Inverse Concept Associations**). If you try to save a Quick Search configuration with more than 5 of these attributes, the error message displays.	Click the **Quick Search** link, and limit the Quick Search attribute items to 5.
A Silo search has been chosen. Complete Match, Under Match or Partial Under Match must also be selected.	A MatchPack matching option was not selected for a search of a silo.	Select one on the MatchPack options, Complete Match, Under Match, or Partial Under Match.

Error Message	Possible Cause	Solution
At least one search parameter needs to be selected	None of the Quick Search selection criteria were selected.	Select one or more of the search parameters on the *Customize Quick Search Apelon DTS* panel.
The last namespace selected is not available. Check server connection and/or select a new namespace.	The namespace (or focus concept) previously being viewed in the tree is no longer available because it has been removed, you are looking at a different knowledgebase, or there is a problem with the server.	Select a new namespace (or focus concept) to view, and/or ensure that the DTS Server is running and that the login information is correct.
The focus concept is not specified or the chosen focus concept does not have the sub nodes needed to produce a tree view.	For the Advanced Tree view, no focus concept (i.e., the concepts to which an association applies) was specified, or the focus concept has no sub nodes.	Select a focus concept with sub nodes.
The last association type selected is not available. Check server connection and/or reconfigure the tree.	The namespace (or focus concept) previously being viewed in the tree is no longer available because it has been removed, you are looking at a different knowledgebase, or there is a problem with the server.	Select a new namespace (or focus concept) to view, and/or ensure that the DTS Server is running and that the login information is correct.

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Reporting Problems

Report problems to Apelon by accessing the Apelon e-customer site at http://support.apelon.com and completing the Support Request Form. A second option is to send an e-mail message to **support@apelon.com**. Please specify the version of Apelon DTS you are using. It is helpful to include log configuration files, if any. A short example that illustrates the problem is greatly appreciated.

Appendix A - DTS Browser Configuration Parameters

Normally a user must enter connection parameters (e.g., DTS Server **host/port**, database **username/password**) on the *DTS Browser Welcome* window. DTS Browser Administrators have the option to preconfigure connection parameters in the **dtsbrowserconfig.xml** file (**DTS3.4\tomcat\bin**) so that users do not have to specify these parameters to connect. Refer to the **DTS Tree Browser Default Logon Configurations** segment of the **dtsbrowserconfig.xml** file.

In addition, if **cookies** are not allowed or are not enabled in the Internet browser you are using, the DTS Browser will obtain required **Tree**, **Detail Panel**, and **Quick Search** display configuration settings from the **dtsbrowserconfig.xml** file. The Administrator can use the default settings, or establish alternate settings (example: the Administrator can change the default namespace in the *Customize Quick Search* panel to an alternate namespace). Note that the Administrator must restart the Tomcat server to initialize any configuration changes.

The DTS Browser will use these configuration settings each time a user opens a new Browser session. Any changes that users make to these settings (e.g., to *Customize Quick Search* panel configurations) will be in effect for the current session only; when subsequent new sessions are opened, the settings from the **dtsbrowserconfig.xml** file will be in effect.

Instructions for modifying default settings are provided in their respective sections, which are highlighted in the illustrated **dtsbrowserconfig.xml** file that follows.

```
<!-- DTS Tree Browser Default Logon Configurations -->

<property name="user" value="dts" />
<property name="pass" value="dts" />
<property name="host" value="localhost" />
<property name="port" value="6666" />
<property name="instance" value="ORCL" />
<property name="sql2k_instance" value="" />
<property name="db_name" value="dts" />

<!-- Setting the demo option to true allows you to use demo_logon.jsp.
This configuration enables the use of any number of DTS server
instances from one logon page.  The user enters a username, password,
and demo name (which hides a preconfigured host and port) -->

<property name="demo" value="false" />

<!--There can be multiple demo names.
Use the following syntax for configuring the demo name logon:
<demoname>_host=<host>

<demoname>_port=<port> -->

<!-- The default demo name for the browser is dtsdemo: -->

<property name="dtsdemo_host" value="localhost" />
<property name="dtsdemo_port" value="6666" />

<!-- ======================================================================== -->
```

dtsbrowserconfig.xml file, continued

<!-- Quick Seach Default Configurations -->

```
<!-- The Quick Search will always require at least one namespace to search
     against.  This is true even if you are doing a silo search.  You have
     two possible configurations for namespace searches.

     1. To search against ALL namespaces in your knowlegebase the setting
        should be...

        <property name="namespace" value="all" />

     2. To search against a single namespace, you may specify the name of
        any valid namespace contained in your knowlegebase.

              For example, to search against the "SNOMED CT" namespace the setting
        would be...

        <property name="namespace" value="SNOMED CT" />

     Selections are limited to all namespaces or a single namespace.  Default is 'all'.
-->

<!-- The 'searchin' property specifies searching in namespace or subset. Its value should
     be either 'namespace' or 'subset'.
     1. For search in namespace, the 'namespace' property value should be declared.

        <property name="searchin" value="namespace" />
        <property name="namespace" value="all" />

     2. For search in subset, the 'subset' property value should be declared.

        <property name="searchin" value="subset" />
              <property name="subset" value="Loinc subset" />
-->
<property name="searchin" value="namespace" />
<property name="namespace" value="all" />
<property name="subset" value="" />

<!-- Each of the following may be set to 'true' or 'false' -->
<property name="exactmatch" value="false" />
<property name="conceptname" value="true" />
<property name="synonymousterms" value="true" />

<!-- The 'maxresults' value must be a positive number between 1 to 9999 -->
<property name="maxresults" value="50" />

<!-- Attributes Setting:
     1. Attribute settings are limited to 5 or less. Attributes include roles,
              inverse roles, properties, concept associations, and inverse concept
              associations. If more than 5 attributes are specified, the search
        will only honor the first 5.
     2. Attribute values are namespace specific.  If the 'namespace' property is
        set to a value other than 'all' the attribute values must exist in the
        specified namespace.
     3. To distinguish between multiple attributes of the same type a numeric value
        must be appended to an attribute name.

        For example, two role values would be specified as...
              <property name="role1" value="Finding site (attribute)" />
              <property name="role2" value="Treats (attribute)" />
```

dtsbrowserconfig.xml file, continued

```
  -->
  <property name="role1" value="" />
  <property name="inverserole1" value="" />

  <property name="conceptassociation1" value="" />
  <property name="inverseconceptassociation1" value="" />

  <!-- Word Match only applies to property searches. -->
  <property name="property1" value="" />
  <property name="wordmatch" value="false" />

  <!-- The following settings apply to silo searches. -->
  <!-- To allow for searching against multiple silos you must distinguish
     each silo by appending a numeric value to the 'silo' attribute name.

     For example, two silo values would be specified as...
     <property name="silo1" value="diseases" />
     <property name="silo2" value="treatments" />

     For namespace only searches leave the silo value empty.

     For example, the silo value would be specified as...
           <property name="silo1" value="" />
  -->
  <property name="silo1" value="" />

  <!-- The siloMatch value must be one of the following numeric values:
     1 = Complete Match
     2 = Under Match
     3 = Partial Under Match
     The default setting is 3, 'Partial Under Match'
  -->
  <property name="silomatch" value="3" />

  <!-- Each of the following may be set to 'true' or 'false' -->
  <property name="spellcheck" value="true" />
  <property name="shortestmatch" value="false" />
  <property name="bestmatchonly" value="true" />

<!-- =========================================================================== -->

<!-- Detail Panel Default Configurations -->

  <!-- The following properties' values should be set to either 'true' or 'false' -->
  <property name="code" value="true" />
  <property name="id" value="true" />
  <property name="detailnamespace" value="true" />
  <property name="preferredterm" value="true" />
  <property name="roles" value="true" />
  <property name="inverseroles" value="true" />
  <property name="properties" value="true" />
  <property name="superconcepts" value="true" />
  <property name="subconcepts" value="true" />
  <property name="conceptassociations" value="true" />
  <property name="inverseconceptassociations" value="true" />
  <property name="synonyms" value="true" />
  <property name="subsets" value="true" />

  <!-- The 'attributelimit' value must be a positive numeric value from 0 to 9999.
     The default value is 100.
  -->
  <property name="attributelimit" value="100" />

<!-- =========================================================================== -->
```

dtsbrowserconfig.xml file, continued

```
<!-- Tree Default Configurations -->
 <!-- Set the 'treenamespace' property to designate a default namespace to display in the tree view panel.
    This value is optional and may be left blank.
 -->
 <property name="treenamespace" value="" />

 <!-- The 'namespacetype' type value must be set.  If the 'treenamespace' property has been set then the 'namespacetype' value
    must correspond to the type of the designated default namespace.  This value will be either 1 if the default namespace
    is of type 'ontylog' or 2 if the default namespace is of type 'thesaurus'.

    If the 'treenamespace' value has not been set then 'namespacetype' must be set to a value of either 0 or 3.
    0 = all          Display a list of available namespaces
    1 = ontylog      If default namespace is of type ontylog
    2 = thesaurus    If default namespace is of type thesaurus
    3 = advanced     Show advanced tree
 -->
 <property name="namespacetype" value="0" />

 <!-- If you set the 'namespacetype' property value to 1 or 2, you must set the following properties. -->
 <property name="showsubset" value="true" />
 <!-- If you set the 'showsubset' property value to 'true', you must set the following properties. -->
 <property name="subsetname1" value="" />
 <property name="subsetonly" value="false" />


 <!-- If you set the 'namespacetype' property value to 3, you must set the following properties. -->
 <property name="associationtypenamespace" value="" />
 <property name="associationtype" value="" />
 <property name="rootconceptnamespace" value="" />
 <property name="rootconcept" value="" />
 <!-- 'subsetname2' property value is optional and may be left blank. -->
 <property name="subsetname2" value="" />

<!-- ========================================================================= -->

</apelprops>
```

Appendix B – Heap Memory Adjustment

If you experience **Out of Memory** errors when performing searches, you may need to adjust the amount of **heap** memory configured for your Tomcat Server. Perform the following procedure to adjust the heap memory. Procedures are provided for *Windows* and Linux installations.

Windows Installations

1. Close the DTS Browser if it is running.

2. Close any instances of Tomcat that are running.

3. Determine the total amount of memory available to Tomcat on the server machine.

4. Navigate to **Apelon\DTS3.4\bin\browser** and open the file **runtomcat.bat** in your text editor of choice. (Right click on the filename and select **EDIT**.) The file (as installed) is illustrated; note the highlighted line.

```
@echo off

set CATALINA_HOME=
set CATALINA_BASE=
set CATALINA_OPTS=-Dorg.xml.sax.driver=org.apache.xerces.parsers.SAXParser
set JAVA_HOME=d:\jdk1.3.1_04

cd ..\tomcat\bin

if "%1" == "start" catalina.bat run

if "%1" == "stop" shutdown

exit
```

5. Modify the highlighted line as shown below.

    set CATALINA_OPTS=**-Xmx512m** -Dorg.xml.sax.driver=org.apache.xerces.parsers.SAXParser

    The **512m** refers to the recommended amount of heap memory, in megabytes. Refer to the DTS Java documentation for the **-X** parameter specification.

6. **Save** the **runtomcat.bat** file and close Notepad.

7. Restart the Tomcat Server.

8. Restart the DTS Browser.

9. Retry the search that produced the **Out of Memory** error. If the error occurs again, try repeating this procedure.

Linux Installations

1. Close the DTS Browser if it is running.

2. Close any instances of Tomcat that are running.

3. Determine the total amount of memory available to Tomcat on the server machine.

4. Open the file **runtomcat.sh** (in **bin/browser**) in your text editor of choice. The file (as installed) is illustrated; note the highlighted line.

```
#!/bin/bash
#
# You must export $JAVA_HOME into your shell environment before running this
# script.  $JAVA_HOME is the shell variable of the directory where you installed
# Java.  You can export the variable into your .bash_profile file like this:
#
# export JAVA_HOME=/usr/java/jdk1.5.0_06
#
# If you have a JRE instead of JDK, you can export that instead:
#
# export JRE_HOME=/usr/java/jre1.5.0_01
#

# cd to working directory first
cd ..

# source in common shell functions
. shell_functions
if [ "$?" != "0" ] ; then
  echo
  echo "Failed to include common shell functions into this script."
  echo "This script should be run from the directory where it is located."
  exit 1
fi

# uncomment in case you want to restrict access to root user
#checkForRootUser

# cd to DTS top level directory
cd ..

export CATALINA_HOME="$PWD/tomcat"
export CATALINA_BASE="$CATALINA_HOME"
export CATALINA_OPTS="-Xmx768m -Dfile.encoding=UTF8
Dorg.xml.sax.driver=org.apache.xerces.parsers.SAXParser -Doracle.jar=ojdbc14.jar"
TOMCAT_SCRIPT="catalina.sh"

# set tomcat bin directory
PRGDIR="$CATALINA_HOME/bin"

# check that Tomcat's bin directory exists
if [ ! -d "$PRGDIR" ] ; then
  echo
  echo "Failed to find $PRGDIR directory."
  echo "This directory contains the script needed to start/stop Tomcat"
  exit 1
fi
```

```
# cd to that Tomcat bin directory
cd "$PRGDIR"

# Check that catalina.sh exists and is executable
if [ -f "$TOMCAT_SCRIPT" ]; then
  if [ ! -x "$TOMCAT_SCRIPT" ]; then
    /bin/chmod +x "$TOMCAT_SCRIPT"
  fi
fi

# Check that setclasspath.sh exists and is executable
if [ -f setclasspath.sh ]; then
  if [ ! -x setclasspath.sh ]; then
    /bin/chmod +x setclasspath.sh
  fi
fi

# start and stop Tomcat
if [ "$1" = "start" ] ; then
  /bin/sh "$TOMCAT_SCRIPT" run
elif [ "$1" = "stop" ] ; then
  /bin/sh shutdown.sh
else
  echo "Usage:  $0 (start|stop)"
fi
```

5. Modify the highlighted line as shown below.

    > export CATALINA_OPTS="-**Xmx768m** -Dfile.encoding=UTF8 -
    > Dorg.xml.sax.driver=org.apache.xerces.parsers.SAXParser -Doracle.jar=ojdbc14.jar"

    The **768m** refers to the recommended amount of heap memory, in megabytes.
    Refer to the DTS Java documentation for the **-X** parameter specification.

6. **Save** the **runtomcat.sh** file and close your text editor.

7. Restart the Tomcat Server.

8. Restart the DTS Browser.

9. Retry the search that produced the **Out of Memory** error. If the error occurs
    again, try repeating this procedure.